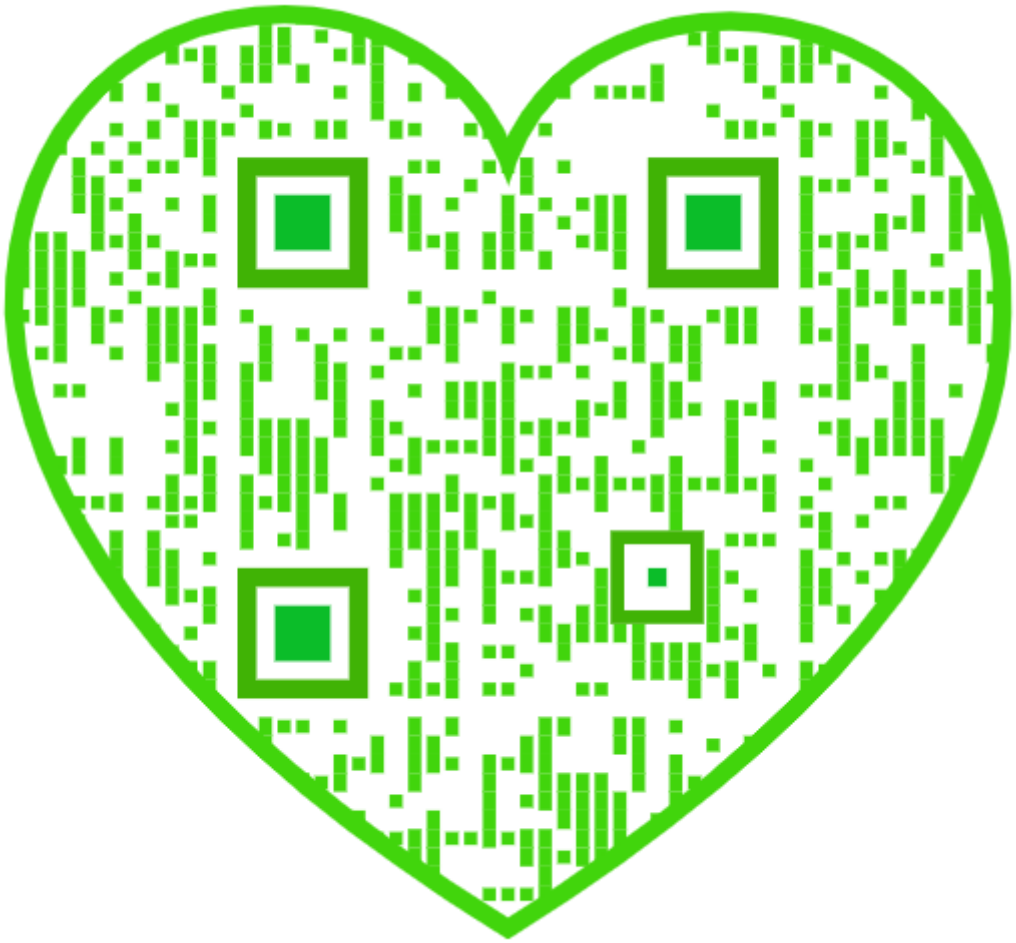

PRINCIPLES

OF

POLITICAL ECONOMY

BY

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PREFACE.

THE following work is intended to embody an exposition of those principles of economic science which must be mastered by every one who would form an intelligent judgment of the causes which influence the public well-being. The main improvement which the author has attempted is the presentation of the subject in a scientific form as an established body of principles. It has seemed to him that, from a scientific standpoint, the most unsatisfactory feature of the current teaching of economics is the presentation of too many opposing views and arguments. He has endeavored to exclude all mere views, and substitute independent investigation for argument. Where investigation leads to a positive result, that result is stated in the form of a point gained; where the result is still uncertain, the deficiency is pointed out, with hints of what new knowledge is wanting to supply it. It is hoped that the principles laid down in the first four books will be accepted by all who understand the subject as forming a well-ascertained, even if limited, body of doctrine. The very fact that the propositions are well established leads to their being reached, not by dogmatic statements, but by courses of thought which leave the reader free at every step to compare the ideas presented

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to him with all the facts he may have learned from observation.

The author takes a more hopeful view of the future development of economics than that commonly found in current discussion. He holds that nothing is needed to give the subject a recognized place among the sciences except to treat and develop it as a science. Of course this can be done only by men trained in the work of scientific research and at the same time conscious of the psychological basis on which economic doctrine must rest. To such investigators a most interesting and hopeful field of research is opened in the study of the laws growing out of the societary circulation. If the same amount and kind of research which have been applied to the development of the laws of electricity were applied to this subject, there is every reason to suppose that it would either settle many questions now in dispute, or would at least show how they were to be settled.

In order not to obliterate in the mind of the reader the distinction between the scientific and the practical sides of the subject, all questions of public policy have been condensed into the concluding book. Here the author has allowed himself more freedom of discussion and treatment than elsewhere, but still encourages the reader to reach his own conclusions by his own methods of thought. This book would have been entirely omitted, as detracting from the purely scientific character of the work, were it not that applications of a science are essential to a good mastery of its first principles. The author trusts that little or nothing of a partisan character will be found even here, and that the student will leave the subject with a feeling that he must rely upon his own investigations for his practical conclusions.

Possibly some apology may be needed for the very elementary and perhaps fragmentary outline of logical method in science which forms the bulk of the first book. This outline was suggested by the belief that much of the confusion and difficulty which surround the subject arise from want of insight into the true significance and use of scientific propositions. The author hopes that it will aid the student in seeing the relation between the logical and the practical sides of the subject, and in making each of these sides help the other.

The general scope of the work has been determined by the principle of condensing into it that which is most valuable to the student in the sense of combining utility with difficulty of acquirement. He holds that the great want of the citizen who is to exercise an important influence upon the policy of the nation is understanding rather than knowledge. The latter he will be sure to acquire by his experience of the world, whether he is or is not educated; but it will be barren of results without guiding principles by which to interpret and arrange the facts he observes. On the other hand, a command of principles requires a course of training and study which can seldom be undertaken with success after one has entered upon the serious business of life. It has therefore the highest elements of value to the student. It is hoped that the student who has mastered the first four books of the following work will feel able to proceed intelligently, either in the study of more advanced branches, or in the explanation of those economic phenomena which will be of daily occurrence in the course of his active life.

The questions found at the ends of some chapters are intended as exercises in applying the teachings of the chapters preceding them, and may serve to test the student's com-

mand of the subject. Some of them may afford material for extended class discussion. In the conduct of such discussions a danger is to be guarded against. If they lead the student into the habit of arguing rather than investigating, they may do him more harm than good. It is essential that he should see in each case what the point at issue really is, and should be taught to recognize and avoid that large and alluring class of questions in which there is no point at issue.

How far the work can be regarded as an original contribution to economic science is to be determined by the critical reader. It may not, however, be inappropriate to indicate one or two points in which it has seemed to the author that the existing form of the subject admitted of improvement. He conceives that in current economic literature there is a triple confusion of things, with rights of property in things, and with the written evidences of those rights of property. This subject he has discussed in connection with the conceptions of wealth, capital, and money.

He has also felt the want of names for certain general concepts, among which the following may be mentioned:

A name for everything which men receive in return for money paid, whether it be wealth transferred or services rendered.

A general name for that which is transferred in payment, whether it be money or credit.

A general term to express those operations of industry and commerce whereby human wants are satisfied, comprising production, transportation, and transfers of ownership.

He has deemed it proper to leave to higher authorities the task of supplying this nomenclature, though, as the reader will notice, he has felt obliged to use several existing terms in a much wider sense than that commonly assigned them.

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BOOK I.

LOGICAL BASIS AND METHOD

OF

ECONOMIC SCIENCE.

POLITICAL ECONOMY.

BOOK I.—LOGICAL BASIS AND METHOD OF ECONOMIC SCIENCE.

CHAPTER I.

INTRODUCTORY VIEW OF THE SUBJECT.

1. When we enter upon the study of a new subject it is sometimes best to begin by divesting our minds of all preconceived notions respecting it, and to make our first examination of it from the most wide-reaching point of view. Let us then commence our study of Political Economy by comparing certain processes now going forward on the surface of this continent with the corresponding ones of four centuries ago.

If at so distant an epoch we had been able to survey the whole area now covered by the United States we should have seen no form of human activity except the pursuits of savage life. The principal occupation of the inhabitants would have been making war upon each other, and hunting wild animals for food. The soil and the forests would have been in their natural state, and neither ocean nor river would have borne any vessel larger than a canoe.

Let us next suppose such a survey to be made at the present time by a being gifted with intelligence but not acquainted with the minds of men. This intelligent being would now see a network of railways covering the greater part of the country. Steamers would be ploughing the rivers, cities would be build-

ing, immense quantities of material of all kinds would be seen carried from place to place by locomotives, trains would be running in every direction, stores of goods would be piled in warehouses, and the prairies would be covered with fields of wheat which at certain seasons would be found undergoing the process of reaping, threshing, and transportation to the seaboard.

It would be evident that this new activity was totally different in kind from anything which had before been going on. In past geological ages the rocks had been ploughed by glaciers, new mountains had arisen, rivers had changed their courses, new lakes had formed and old ones had sunk. But the intelligent being could form no idea why this new kind of activity had arisen until he became aware that it was all the work of other intelligent beings called men. Having learned this, let us suppose him to descend to the earth and seek out some one of the men engaged in the activity in order to learn its cause. He first finds the engineer of a locomotive making its way across the country. "Why do you run this locomotive?" he inquires. The answer would be, "I run it in order to earn money." "But what do you want of money?" "I want to buy food, clothing, and shelter for myself and my family." Seeking out a farmer harvesting wheat on the prairie, he would get nearly the same answer. Go where he would, every one would tell him that he was working for himself, and that the object of all his labor was to secure an increase or a better supply of certain articles necessary to his well-being, the most important of which would serve for food, clothing, shelter, pleasure, and education. Every one he met would ostensibly have only his own interest in view.

But further examination would show that, notwithstanding this apparent universal selfishness, all were engaged in working for the good of others. Suppose our intelligent being to alight on the plains of Texas and there find a body of men herding cattle. He sees that they kill the cattle and give their hides to other men to be carried to the sea-coast. Here

others put them on board a ship on which they are conveyed to England. In England another set of men tan the hides, and yet others make them into boots and shoes. Wishing to see what becomes of the boots and shoes, he traces them to the feet of a miner in Cornwall. The miner daily goes deep under ground to take out tin. Tracing this tin to its destination, he finds it worked by countless hands, follows it across the Atlantic to New York, into a freight-car, into a tinsmith's shop, finally seeing it end its long journey in the form of utensils for the use of the herdsman in Texas.

"How did you know that that Cornwall miner wanted a pair of boots?" he says to the herdsman. "How did you know that herdsman in Texas wanted a tin dipper?" he says to the miner. To his astonishment he finds each in entire ignorance of what becomes of his property after it leaves his hand. The herdsman does not know that his hides were even taken to the seashore; the man who put them on board ship did not even know where the ship was going; and not a man on the ship knew who purchased the hides in England. At Cornwall the miner did not know what became of his tin. In a word, nearly every one would be found ignorant of the final destination of the things he was making.

2. By continuing his investigations our intelligent being will be led to the following conclusions:

1. The operations which he has been studying are those of a single harmonious system.

2. The object of this system is to supply each individual man with certain objects brought to him from all parts of the world and necessary to his existence, health, and pleasure.

3. The harmonious working of the system leads to its being thought of as one great piece of mechanism.

4. But this mechanism has no directing head to move it. Its operations are kept up by an infinity of internal forces, each of which operates only within a very limited sphere.

We shall call this mechanism the **social organism.**

3. *Moving Force of the Social Organism.* We are now led to inquire into the general nature of the force which moves the organism. The matter may be summed up in the following fundamental proposition:

The one force which keeps every part of the social organism in activity is the desire of each individual man to enjoy certain results of the labor of others, which he can command only by himself laboring for others.

The more highly developed the man is, the greater the number and variety of the wants which he requires to be supplied by the social organism. In the lower scale even of civilized society, it suffices if he can gain the food requisite to maintain his strength, and such clothing and shelter as will protect him from the elements. But as he ascends in the scale he wants more palatable food, finer clothes, and a larger house. After enjoying these, his house must be embellished with every ornament that can please the eye, and furnished with every appliance that can give bodily ease. If he can command yet more from the social organism, the whole world must be searched to find food and drink for his table, and the clothing required to keep his body at the most agreeable temperature. Finally, after commanding everything which even the most cultivated man can desire, he will accumulate property merely for the love of possessing it, for the power which it gives him, and for the good to his fellow-man which he may be able to do by its means.

4. *The Law of Labor.* Nature does not directly furnish man with the objects of desire now under consideration. She supplies only the raw material by which these objects may be obtained through the instrumentality of human exertion. Through such exertion, bodily and mental, the wool of the sheep becomes clothing for man, the stone in the quarry becomes the foundation for his house, the clay in the fields becomes the material for its walls, the wood of the forest is transformed into chairs and tables, and the material of the soil

becomes food. His desires being unlimited, while his means, that is, his labor, is limited to a few hours daily, he seeks to economize the latter so as to secure the greatest number of objects of desire. Hence a second fundamental proposition:

Mankind continually endeavors to satisfy each separate want with the least possible expenditure of labor.

On this simple law of human action is founded the science of political economy. The law is not a mere hypothesis, but a truth which is nearly universal so far as civilized men are concerned. Among partially civilized communities, whose desires are limited, the laws of political economy do not necessarily find any application.

5. *Origin of the Social Feature in the Want-supplying Mechanism.* If each man had to depend on himself for all his means of enjoyment, he would, as compared with his actual condition, be as good as helpless. It is only by exchanging services with his fellow-man that the great mass of objects of desire can be attained. How important an element of civilization this is any one will see by looking around him and remarking how few even of the necessaries of life he would be able to command if they were not supplied him by his fellow-man. How many of us could make our own bread or clothes, or build ourselves the rudest kind of a house?

Indeed, from the point of view of political economy, the great difference between civilized and savage communities is that in the latter each individual for the most part works for himself, while in the former each one labors for all the others.

6. Let us see how far we may carry the conception of society as an organism. An organism is something which is not designed, but grows, and in which the acting forces seem to reside in all the molecules which make up the organism. For example, in the human body every corpuscle of the blood and every nervous fibre is endowed with certain activities which enable it to perform its own functions, and to minister to the

good of the whole body. So in society. The molecules are individual men. The forces which bring about the great movements of commerce have their origin in individual desires—just as the nutrition of the body has its origin in the minute molecules of blood. As the will of a man does not determine how his blood shall circulate, nor how nutrition shall go on, so there is no one authority in the world who wills in what way men shall employ their labor or render services to each other. Leaving out individual cases, this is wholly a matter of private agreement between man and man, or between one body of men and another. We may compare the ignorance of the workman as to who shall enjoy the products of his labor with the lack of knowledge on the part of each corpuscle of the blood as to the effect of its nutritive power.

Although we may consider society as an organism, we must not carry the analogy with living organisms too far. There is one very important point in which society or the social organism differs from a plant or animal. We think of every plant and animal as having an individuality of its own, distinct from the conglomeration of organs which form it. Moreover, we cannot add to or subtract from the parts of the plant or animal without detracting from its character. A man cannot have three legs, and if he has only one he is imperfect. But there is no such completeness in the social organism. We can add new men to any extent, or we may divide a country into two without changing the character of the organism. In other words, it has no such attribute as *individuality*. By assigning such an attribute to it, and giving it a name, we may be led into confusion of thought. The people of each country and of each city may be considered to form a separate organism, but at the same time steam transportation has brought most of the world into such close communication that we may consider all these little organisms as parts of a great one, including the whole human race.

The more closely and intelligently we look into the operations of human society the more we shall marvel at the perfec-

tion of its working. No man could ever have contrived such a system; and had it been contrived, no men or combination of men could direct its work, any more than they could send the blood through the body of an animal. To the thinking man it forms one of the most interesting objects of study. There is nothing in the wonders of the heavens or the mysteries of chemical combination better fitted to kindle our curiosity, and to gratify our desire to understand what is going on around us, than the study of the social organism.

We shall proceed in this study on a plan not unlike that which the physician follows in acquiring a knowledge of the human body. But as a preliminary step we shall have to enter upon some considerations of scientific method not necessary to the work of the physician. The reason of this is that our object of study is farther removed from the immediate sphere of sense than is that of the medical student. The latter studies the bodies of animals by actual dissection and by observation with his eye and with the microscope. But the economist cannot dissect society and make its component parts visible in the same way. The dissection is indeed to be performed, but only in imagination, by describing the different parts of which society is made up, and bringing in, not the real men who surround us, but abstract and generalized forms of these men, which bear the same relation to living men that a mental image does to a real object. To compensate for this substitution of mental sight for eyesight, we need scientific method. The order of our studies will not be materially different from that of the medical student. Our first consideration is the anatomy of the organism, the forces which move it, and the manner in which the various parts are combined into a single harmonious whole. Having got a clear idea of what the organism is, we have then to go into many details respecting the laws according to which it operates. Finally, we shall have to apply our knowledge of these laws so as to form intelligent conclusions respecting the effect of governmental action upon the interests of society at large.

CHAPTER II.

DEFINITION OF THE FIELD OF POLITICAL ECONOMY.

7. From what was said in the last chapter it will be seen that Political Economy treats of human desires, and the laws and conditions of their gratification under the circumstances in which men actually find themselves. But the field of human desires is by no means all included in Political Economy. Confusion of ideas often arises from not considering the limits of the subject. We therefore point out certain branches of thought which, though sometimes confounded with Political Economy, do not belong to it.

There is a wide field of investigation included under the general term *Sociology*, or the science of society. The consideration of human desires in some of their aspects belongs to this field. Although the subjects treated of under the general head of Sociology all run into each other by insensible gradations, yet in that principal branch of the subject growing out of human desires we may recognize at least three divisions.

Firstly, we may inquire how human desires originate, and how they are modified by the circumstances which surround the individual. Among these circumstances are his ancestry, his education, the community which surrounds him, and the government and institutions under which he lives. But this inquiry into the origin and growth of human desires is quite distinct from Political Economy. The latter takes the man up, ready-made as it were, and has nothing to do with the question how he got to be what he is. The reason for this distinction may be seen at once by reflecting that the laws which control the formation of character are distinct from those which determine the acts of men after their characters are formed, and therefore must not be confounded with them.

Secondly, we may analyze the desires and appetites of men, investigate their various good and evil tendencies, set forth their uses and abuses, and trace their ultimate effects upon the welfare of the individual and of society. This, however, is not the object of Political Economy, but of *Moral Science.*

Thirdly, taking the desires and appetites just as they are, and regarding them merely as forces which impel men to action, we may investigate the laws of human activity to which they give rise. In other words, having given a community of men moved by certain desires, we trace out the laws which govern their efforts in seeking to gratify those desires. This and this alone is the object of Political Economy as a pure science.

8. *Illustrations.* As an illustration of the difference between the fields of inquiry just described, let us consider the case of a laborer who works industriously all day and then spends his earnings in strong drink.

The sociologist, who is concerned with the laws of development, searches out the history of the man and his parents, and shows how, by the hereditary transmission of appetite, by early indulgence of his morbid taste, by the influence of evil companions, and by a lack of proper mental stimulus combined with exhausting bodily labor, his present deplorable character has been formed. The results which may be gained by this investigation will be of the greatest importance to one seeking the amelioration of humanity, but they will not belong to Political Economy. The political economist looks at the pile of earth thrown up by the man's shovel, shows that love of strong drink was one of the moving forces that inspired him, and reckons how much less work would have been done if he had not expected the tavern to be open that night.

The moralist shows the man the destructive effect of his conduct upon his highest interests, and the suffering to which he exposes his family, and thus hopes to dissuade him from further indulgence.

Finding his preaching vain, the moralist goes to the sociol-

ogist for instruction. Here he learns that warnings are of no avail to one whose appetites are his master. The ever-present thirst overcomes all dread of the future. The man must, either by medical treatment or by physical restraint, be kept from gratifying the morbid appetite. The moralist desiring to employ only effective means, now appeals to the political economist to know what effect various plans for foiling the aims of the drunkard will have. Perhaps he thinks that if he can induce the man's employer not to pay him in money but in bread-tickets, he will be no longer able to gratify his appetite. But the economist will point out that this plan will be ineffective, because the man can exchange his tickets for money, and thus obtain the means of buying liquor. Again, the moralist will inquire whether by levying a heavy tax on spirituous liquor and thus advancing its price the man will not be discouraged from indulging it. To answer this question the economist collects statistics showing to what extent men are prevented from indulging their appetites by increasing the cost of the indulgence. As the result of an immense collection of facts he will show the moralist that nothing can be expected from this remedy. Perhaps his conclusion would be that the higher the price of liquor the more the man would spend upon it, and therefore the less money he would have for his family.

The economist might say in conclusion, that within the range of his science no remedy could be found. His reasoning might be: "It is very clear from the man's actions that he desires strong drink more than he desires bread or clothing for his family. I know of no way in which a man can be made to accept that which he desires less in preference to that which he desires more, except positive restraint."

In all this the political economist would not be expressing any opinion upon the good or evil of the drunkard's desires. It is his sole business to trace cause to effect, and in doing so to accept things as they exist. But it must not be supposed that his conclusions are therefore of no value to the moralist. On the contrary, what the moralist most needs is to know

the ultimate effect of the different remedial measures which may be proposed. It does not follow that because a benevolent man or a charitable association desires to do good its exertions will really result in benefiting the community. For instance, it is now very generally recognized by thinking men that indiscriminate charity is a source of evil, in that it encourages mendicancy and general helplessness. Whether all charity as actually practised does not in this way do as much harm as good is still an open question, and one which can be decided only by the investigations of the political economist.

Economical science, therefore, considers man simply as an adapter of means to ends, but does not inquire how these ends arise, nor whether they are really the ends towards which men should strive. If this limitation seems unsatisfying to the reader, he must remember that the mixing up of different branches of inquiry is productive of confusion of thought, and that the questions whether an end is good and how an end can best be attained are totally different.

9. It is neither necessary nor important, even were it possible, that we should define with entire precision the point at which political economy stops in carrying out the line of investigation we have indicated. A sufficient idea of its field may be given by saying that it includes the general subject of the laws of human welfare so long as we consider welfare to be only the gratification of desires.

Wealth being directly or indirectly a potent instrument for commanding objects of desire, political economy is sometimes called the *Science of Wealth*.

Again, objects of wealth being nearly all obtained by purchase and sale in public markets, the science has also been called the *Science of Exchanges*.

"*Economics*" is a term introduced by recent English writers which has the double advantage of brevity and of avoiding the serious objections brought against the current term *Political Economy*.

CHAPTER III.

OF SCIENTIFIC METHOD.

10. As a general rule the opinions of men on those subjects which immediately concern their interests as individuals, and in which the truth of the conclusions can be speedily tested by experience, are sound and correct. But when men step outside this limited field by entering upon the investigation of wider-reaching subjects and more remote interests, error is the rule rather than truth. The reason of this proneness to error is that in all such cases there is but one way of being right, while the ways of being wrong are innumerable. A course of reasoning may change from right to wrong at any step, and thus the chances of being right at the end are very small unless thought is aided by correct guiding principles. Such principles are afforded by scientific method.

In treating this subject we must begin by correcting a serious misapprehension. This misapprehension consists in thinking of scientific method as something wholly different from the method of drawing conclusions in every-day life. Although the following may not be considered a logically exact definition of the subject, it is a description which the student should carefully bear in mind.

Scientific method consists in applying to those subjects which lie without the range of our immediate experience those same common-sense methods of reasoning which successful men of the world apply in judging of matters which concern their own interests.

It is not therefore some difficult and intricate theory to be learned, but rather the practice of a restraining discipline to keep the mind from wandering into vague speculation, and confine it to the analysis of each special case in hand. A

distinguished English writer condensed the above description by defining science as simply "organized common-sense."

11. *The Problem of Scientific Method.* Let us now look at the problem which faces us with a view of seeing how we are to apply common-sense methods to its solution. The situation is this: every man who reads the newspapers transacts business, and studies history is brought from day to day into contact with a great mass of facts. He sees going on before him the great operations of manufacture and commerce which we have summarily described in the opening chapter. The longer he lives the greater the number of events he will have in his mind. But the mere knowledge that such and such things have happened, that certain cities have been built, new states populated, new markets opened up, fluctuations in prices taken place, and particular changes in the tariff been made, is in itself of no use to him. The poorest day-laborer may know almost as much about what has been going on as he does himself. What the man wants to be able to do is to see into the future. If it is proposed to build a new railway, he wants to know what effect this railway will have upon the supply of goods brought to market. If a new silver-mine is discovered, he wants to know the effect upon the supply of silver and upon the coinage of money. If Congress changes the tariff, he wants to know the effect of this change upon the wages or profits he can earn, and upon the prices of the clothes he wears, of the food he eats, and of the goods he buys and sells. Thus the problem before him is, by means of such knowledge as he has acquired from reading and experience, to foresee in what way his interests or the interests of the country at large are going to be affected by changes and improvements in manufactures, commerce, and governmental policy.

Here it is that scientific method must come into play. It shows him how he actually does go to work to form conclusions about the familiar facts of his daily life, and then it

shows him how to apply the same method to the larger problem before him.

12. ***Form of General Propositions.*** In the application of scientific method all our conclusions must ultimately rest upon facts. But, as just shown, we cannot draw any sound conclusion from facts unless the circumstances are properly analyzed. If we have a fact or a series of facts we must inquire, How did they arise? According to what general rule did these things happen? These questions are answered, sometimes in a very imperfect way, and at other times more satisfactorily, by establishing certain relations between events; which relations are known by the name of *laws of nature*, or simply *laws*.

A law of nature can only be expressed in the form of a conditional proposition. Its general form is:

If a certain state of things be true,
Then a certain result will follow.

Examples of such propositions are as follows:

If you touch gunpowder with fire, then it will explode.

If you leave a heavy body unsupported, then it will fall to the ground.

If you bring a large extra supply of goods to market, then the prices will fall.

If you lessen a man's income, then he will economize in his expenditures.

If you increase the import duty on goods from abroad, then their prices will rise.

If you give a man perfect freedom, then he will follow the course indicated by his feelings and his judgment.

In these general statements, that which is supposed true and taken as the basis of the argument is called the **hypothesis**; that which then follows is called the **conclusion.**

Now notice certain characteristics of all these propositions. In the first place, the conclusion is only hypothetically true. The hypothesis, commencing with an "if," is presupposed,

and if it is not true the conclusion may fail. For example: if there is no heavy body, or, the body existing, if we keep it supported, there is no falling. Gunpowder has never exploded within a hundred miles of the north pole. And in general all scientific conclusions are to be regarded, not as particular truths, but only as things which are or would be true under certain assumed conditions. The question whether these conditions do or do not exist is a matter of fact always open to challenge, and which we always have to decide in the best way we can. All that we can ask of the scientific statement is that the *connection* between the hypothesis and the conclusion shall be true.

Again, we must never forget that, in addition to the hypothesis which we state, we always have to presume the negative hypothesis that nothing happens to change the conclusion. For example, when we say if gunpowder is touched with fire it will explode, then, in addition to the expressed hypotheses that the gunpowder exists and that you touch it with fire, we have the implied hypothesis that it is dry and in good order as we are accustomed to find it. When we say that an unsupported heavy body falls to the ground, we must implicitly assume that it is heavier than its own bulk of air, because if lighter than air, like a balloon, it will rise instead of falling. We also assume that it is not held up by electrical or any other attraction. If it is fired up from a cannon it will not fall to the ground immediately, though it must ultimately. Time will be required for the effect to follow. Thus, every general proposition may need to be modified in an infinity of ways when we consider it in its application to special cases.

13. *Induction and Deduction.* General propositions can only be learned in the first place by a study of the facts of experience. The process by which we infer a general law from observed facts is logical *induction*. Induction is therefore the first step in the acquisition of exact knowledge.

Deduction. The process of reaching a conclusion by means

of general propositions is called logical *deduction*. In strictness the process of deduction consists in chaining together a series of hypothetical propositions, the conclusion of each step being in whole or part the hypothesis of the step next following. As a simple example of how a deductive process may be applied without thinking of logic, let us take our conclusion as to what will become of a piece of meat which a child drops over the surface of a pond stocked with fish. To reach the conclusion we have unconsciously in mind the separate propositions, "An unsupported body held over water will drop to the surface of the water;" "A body heavier than water will sink;" "If edible matter comes within reach of a fish he will eat it." By joining these several propositions we have the single proposition, "Heavy edible matter left unsupported over a pond stocked with fish will be eaten by the fish." But we must never forget to preserve a distinction between this general and hypothetical proposition and the concrete particular propositions, "This pond is stocked with fish;" "Mary let a piece of meat drop into the pond." We can reach a conclusion as to the actual matter of fact only by assuring ourselves of two things: first, that the existing state of things corresponds to the hypothesis; and secondly, that there is a true general connection between the hypothesis and conclusion.

14. *Succession of Cause and Effect.* In the process of deduction we suppose that there is a state of things corresponding to one or more of our hypotheses. From this supposition we conclude, by the aid of the law, that another state of things, or conclusion, will follow. In this process,

The first state of things is called the *cause;*

The second state of things is called the *effect.*

And, as already indicated, that general statement which expresses the relation between the cause and the effect is called the *law.*

The distinction of cause and effect is only relative, not absolute; an event is an *effect* in its relation to the preceding

events out of which it arose; but it is also a *cause* of the events which follow it in pursuance of a law. As a general rule, everything that happens is both a cause and an effect.

It must be remembered that the relation of cause and effect is not one of mere succession, but of succession in pursuance of a general law. When a countryman at an inn pulled a bell, and immediately heard the gong sound for dinner, he inferred a relation of cause and effect between his effort and the sound which followed. He was clearly correct in his facts. What was his error? It consisted in inferring a general law of connection between the pull and the sound, when in reality there was no such law.

15. *Abstraction.* All science presupposes that the events with which it is concerned are parts of a regular series of causes and effects, following each other in pursuance of general laws. Most events which actually occur in the world are the product of a very complex combination of causes, in which the silent hypothesis, "other conditions being equal," does not hold true, and in which the operation of every cause is altered by the concurrent action of a multitude of other causes. These causes are continually changing, so that it is generally impossible to infer a law from mere observation. To reach a rational result, we have to begin by considering the action of each cause separately. We are then said to *make abstraction* of all the causes which we do not consider.

The first steps in the construction of a deductive science consist in the abstraction of all but the most fundamental and widely diffused causes, and in investigating the succession of cause and effect as it would be if the action of these causes were not modified in any way. As an example of this let us take the science of mechanics.

The motion of every body on the surface of the earth is the result of a great number of forces. We get at the effect of these forces by such a succession of steps as the following:

First Hypothesis. We suppose a body acted on by no force.

The conclusion is, the body will move forward in a straight line forever.

Second Hypothesis. We suppose the body to fall under the influence of gravity, which we suppose constant.

Conclusion. The body will fall a certain distance the first second, three times as far the next second, five times as far the third, and so on.

Let it be remembered that neither of these hypotheses is ever fulfilled in nature. We never saw a body either acted on by no force, or moving under the influence of no force but gravity. Gravity itself is not the same at different heights. The same thing is true of all the fundamental conceptions of physics. We talk and think of bodies having no size; of "material points;" of machines without friction, and so forth. We do all this to lay a foundation for further studies in which the causes first abstracted may be considered.

So in Political Economy. We begin with a hypothetical man, animated by the one motive of gaining all the satisfaction he can by his labor, alive to his own interests, ready to turn his hand to a variety of things, and of such sound judgment that he makes no mistakes in his calculations. In other words, we at first make abstraction of all the little imperfections and variations from this ideal. We then make further hypotheses respecting the occupations he can engage in, and the appliances he can command, taking care to come as near as possible to the general average condition of mankind. Then we consider one by one the several variations from our first hypotheses, until we have gone as far as we deem necessary.

Such hypotheses and the laws with which we connect them tell us nothing about *quantities*, and therefore do not suffice to reach practical conclusions. To answer the question, How much? we have to study statistics of all kinds, and thus learn, with as much exactness as we may, the numerical quantities of all kinds, whether the numbers of various kinds of men, or the quantities of various productions, which enter into the problems of our science.

16. ***Pure and Applied Science.*** The preceding method leads to a distinction between pure and applied science.

A *pure science* is one in which we consider only those causes whose action we can trace with clearness and certainty, and make abstraction of all others.

An *applied science* is one in which we consider, in the best way we can, all the causes which come into play in some special class of cases, and thus reach conclusions which we believe to need no further modification.

Thus, there is a pure science of thermo-dynamics, formed on ideal kinds of matter, having properties never found in real matter. And there is an applied science of steam-engineering in which the special properties of the iron in the engine, the coal it consumes, and the steam it generates are considered.

So with Political Economy. *Pure economics* is an ideal or hypothetical science in which we consider only the general characters of great classes of men, and those widely diffused causes whose action we can trace in the social condition of communities and in the great movements of agriculture, manufactures, and commerce. We thus form a single consistent system.

In *applied political economy* we superpose upon the system of pure economics the causes which operate in some special case, and find how the conclusions of pure economics are thus modified. We may consider, for example, some peculiar state of things in a German town, or the economic effect of establishing homes for newsboys in New York, or the effect of a strike in the building trade upon the interests of those engaged in it.

The distinction between a pure and an applied science cannot be made a sharp one. As our knowledge expands, pure science is made to include a wider and wider field, and we can never say exactly where the line should be drawn.

CHAPTER IV.

SPECIAL FEATURES OF ECONOMIC METHOD.

17. Although the processes just described are common to all science, yet in the case of political economy they have to be applied in a way entirely different from that of physical science. The reason of this difference is that one great object of political economy is to foresee how men will act. Now, human acts are not governed by necessary and invariable laws of the class recognized in physics, but by will and choice. There is no law of nature which compels goods to be sent to the best market, or which requires men to dig mines and build steamships. Should we attempt to reduce the phenomena of manufactures, commerce, mining, etc., to the same kind of laws which prevail in inanimate nature, we should never get at any certain result, but might be wrong as often as right. Hence an investigator ignoring human will and motives and studying the work of mankind as if it were a product of natural forces would be at a great disadvantage.

But we have a resource which compensates this disadvantage in our knowledge of the operations of our own minds. We each know individually that in deciding how we shall employ our time we are governed by a consideration of the relative benefits and evils of the various courses of action between which we have to choose. As a rule we choose that course which will yield us most good or pleasure. Looking at our fellow-men, we are irresistibly led to the belief that their acts proceed from like motives. We instinctively trace their actions to hopes, fears, and desires similar to those which animate ourselves. We feel that, like ourselves, they seek to reap the maximum of enjoyment from the minimum of disagreeable labor.

This conclusion is verified by universal experience. We never see men voluntarily wasting their labor unless the labor itself is a source of enjoyment. In no case do they spend more money or time on an object than is necessary for the purpose.

The significance of our knowledge of human nature is this: it gives us an understanding of the forces at work in the social organism which we cannot command in the case of those living organisms with which we are familiar. We have already seen that the forces which animate the former are the desires and activities of individual men who bear the same relation to the whole organism that the molecules which make up an animal body bear to the body itself. But in the case of an animal we know nothing about the vital forces which animate the molecules, and can only study the organism from outside, as it were, while in economics we do know all about the motives which animate men in general, and can see how these motives lead to all the forms of human activity. The economist therefore has a great advantage over the physiologist in being able to understand the working of the minute machinery of which the physiologist remains entirely ignorant.

18. The fundamental and most general hypotheses of political economy may now be formulated as follows:

1. That man is a being moved to action by an unlimited series of desires.

2. That these desires can be partially satisfied by the exertion of those faculties, bodily and mental, with which the Creator has endowed him.

3. That he is a reasonable being capable of adapting means to ends.

4. That in consequence of being a reasonable being he will exert his faculties in such a way as to secure the maximum gratification of desires with the minimum of inconvenience under the circumstances in which he is actually placed.

Our science therefore recognizes all the complicated machinery by which human wants are gratified as the result of

the single prime moving force defined in § 2, namely, *human desires*. These desires are to be regarded as the first cause of economic effects. And this cause, considered in its relation to the effects produced, is not of the kind commonly investigated in physical science, but belongs to the class of *final causes*. The laws which prescribe how railroads shall be built, or when ships shall sail, or where manufactories shall arise, can only be laws of human action; and such actions are determined by a final cause, the will of man. They are subjects of scientific investigation only because, as assumed in the third and fourth of the preceding hypotheses, we can foresee how men will act under given circumstances, by knowing what, from their point of view, will be the course of action best adapted to lead to their ends.

It is sometimes considered that political economy makes abstraction of every human passion or motive except the desire of wealth and aversion to labor, and that it represents man as a perfectly selfish being. But this is true only under a great modification of the sense in which we are to understand the terms used. Man is considered as a selfish being to this extent, and to this only, that he has his own desires which he is exerting himself to gratify. The desires themselves may be of the most benevolent kind. The labor of the Sunday scholar who is trying to earn a few pennies to put into the missionary-box may be included in the domain of political economy as well as any other labor. A man may spend his entire income in sending missionaries to the heathen or in charitable objects without violating the laws of political economy; for it is certain that he will not spend his money in this way unless he desires to have the heathen converted or the wants of his fellow-men relieved. These benevolent desires are part of the man's nature as much as the desire for a good dinner is. They lead him into making the best bargains he can for himself in buying and selling, just as other desires do, because the better bargain he makes the more money he will have for the heathen and the poor.

19. *The Deductive Method.* In so far as we can construct a purely deductive science of economics, based on the above hypotheses, our methods may be stated in the form of answers to two problems, as follows:

PROBLEM I. To foresee how men will proceed to attain any given end by their industry.

Method of Solution. Discover, from the condition in which they are placed and with the knowledge which they possess, what seems to them the easiest way of attaining that end: that way they will adopt.

PROBLEM II. To find how men will spend their labor.

Method of Solution. Discover, from the condition in which they are placed and from the character of their desires, in what way they can derive the maximum of enjoyment from their labor, in what way they will spend it.

Were our knowledge of the whole world, including every man in it, complete in every particular, and were we able to apply all this knowledge at every moment, we might imagine ourselves to predict all economic phenomena by this method much as the astronomer predicts the motions of the planets. Our knowledge being obviously so imperfect that we cannot predict in this way, the preceding solutions express, not our method of discovering facts, but our method of arranging them after they are discovered. That is to say, having learned from the statistics of manufactures and commerce what employments men engage in, we conclude that these are the employments from which they derive the maximum of enjoyment. We thus can put together our deductive chain by a reverse or inductive process. But, so far as the form of our conclusions is concerned, the final result is the same whether we reason in one direction or the other.

20. *Requisites for the Deductive Method.* In order to apply the above method the economist must be supplied with three classes of data.

First, the conditions which surround mankind.

Secondly, the nature and objects of human desires.

Thirdly, the extent and kind of knowledge which men possess on the subject of how they may secure the satisfaction of their desires.

These several data can be found only by observation, and their discovery is therefore a process of induction into which abstract reasoning should not enter. Let us see in a general way what these data are.

I. The general condition of man is one in which nature offers him an infinite variety of services, provided he will adopt the proper means to command those services. She offers him land by cultivating which he can supply himself with food; she offers him coal on condition that he will dig it, and ores by smelting which he can supply himself with metals. She rewards him for every improvement which he will make in his tools. If he builds and properly equips a mill, she will turn it by the power of the wind; if a steam-engine, she provides him with the expansive force of steam. But she offers very different gifts to different countries. One she supplies with a fertile soil: here man expends his energies in raising wheat and corn. Another she supplies with coal and iron: here man becomes a miner. Another she supplies with timber and water-power: here man becomes a manufacturer.

Men will find out for themselves these natural advantages very much sooner than a political economist can discover them for him; no inductive logic is therefore necessary for their discovery.

II. *The Character and Objects of Human Desire.* The desire of men for special objects is in general to be learned from observation of their acts on a large scale, so that no general conclusion can be stated. But in the case of civilized men there is one general characteristic which lies at the bottom of the difference between his state and that of the savage. It is that he seeks to provide against his future wants, as well as to gratify his present ones. Hence his future happiness is an object of present desire. We shall see hereafter that without

this regard for the future no accumulation of wealth would be possible.

Yet another feature of the desires of civilized man is that they are practically unlimited. If every man were satisfied as soon as he had accumulated the things necessary to supply his current wants, the whole fabric of economics would be changed. Our science takes account of the fact that great numbers of men accumulate all the riches they can, regardless of their already having enough for their own uses.

III. *Influence of Knowledge.* Man seeks his ends, not necessarily in that way which is absolutely the easiest, but in the easiest way he knows. As his knowledge increases he discovers ways of increasing his power which he did not before know; and so important is this knowledge that it has been more instrumental in enabling him to improve his condition than his labor has. Thus, our knowledge of the expansive power of steam has caused the labor spent in making engines to be almost infinitely more efficient than would have been the same amount of labor without that knowledge.

21. *Limitations on our Knowledge of the Fundamental Data.* Supposing ourselves to be equipped with a complete knowledge of all the preceding data, we might be able by deductive reasoning to predict and explain all human acts devoted to the production and enjoyment of wealth. Unfortunately, however, our knowledge is so limited that we cannot make absolute predictions as we can in a physical science. The reason is that many of the data belong to the future and therefore cannot be foreseen. Moreover, we know very little about individual men, and so we have to reason about them in large masses. Thus two limitations are placed upon our powers of foresight, which at first glance might appear fatal to our success as investigators, namely:

I. We know very little about each separate man; we cannot tell what notion may enter his head, or how absurdly he may behave.

II. We do not know what causes may, to-morrow or next year, come into play to upset or alter our conclusions.

But an examination will show that after all there is a great deal of value which we can learn, and that these limitations are not so destructive to satisfactory conclusions as they at first sight appear. Let us begin with a consideration of general or average results, to which we are confined by the first limitation.

22. *The Law of Averages.* What we are concerned with in political economy is, not the interests of single individuals, but those of society at large; that is, the average interests of great masses of individuals. It is true, and we must never lose sight of this truth, that the community is made up of individuals, and that nothing can be beneficial to a community unless it be beneficial to some or all of its members. But since we cannot consider all the members individually, we must take general averages.

Now it is a familiar fact that many events which considered individually are matters of pure chance occur with extreme regularity in the long-run. A familiar example is the proportion of misdirected letters and of letters without direction which are dropped into great post-offices like those of London and New York. The number of such letters increases almost as regularly, from year to year, as the number of letters posted.

Another example is afforded by the tables of mortality. Although out of the hundred thousand members of our largest Life Insurance Company it is impossible to say who will be living and who dead at the end of five years, the actuary can nevertheless predict the total number who will die within that time with hardly a possibility of being wrong by 5 per cent.

As a third example the curious student may enumerate the names found in the directory of any large city, and find what proportion of them are Smith. This proportion, in cases where the numbers are large enough, will be found to vary wonderfully little from 1 in 85. At the census of 1880 the

population of Chicago was 500,000. This proportion would give 5882 Smiths, and we may conclude with much confidence that this result is within 5 per cent of the truth.

The limitations to which economic investigations are subjected, so far as the law of averages is concerned, may be defined as follows:

I. In cases where some individual opinion or habit is alone concerned, we cannot apply scientific method to determine what conclusion the individual will reach. For example, there is no law by which the economist can determine beforehand the salary which a railway manager or the President of the United States can command. Presidents are too few in number, and railway managers too diverse in the character of the operations which they control, to enable any reliable average to be fixed.

II. But where the acts of thousands or millions of men are concerned, and where the question is to reach a conclusion respecting sums total in which the part of each separate individual is so small as to be lost in the mass, we may apply scientific method. This is the case with nearly everything which concerns the great operations of agriculture, manufacture, and commerce, the settlement of the country, the cultivation of the land, the raising of crops, their transportation to market, the growth of manufactories, the prices of goods, and countless other results of human effort. When considered in the mass, these processes go on in accordance with definite and fixed laws, which scientific method enables us to understand and investigate.

23. *Unknown Economical Causes.* Suppose that we desire to know what a ton of Bessemer steel will be worth three years from the present time. It would be impossible for any economist to answer the question owing to the multiplicity of unknown causes on which the price may depend. The supply of crude iron, the discovery of new processes of manufacture, the number of railways to be built, the tariff to be levied, the wages to be paid, all come in to influence the result.

But this does not prevent us from predicting what effect any given cause will have on the price with almost as much certainty as we can predict the properties of a chemical compound or the power of an engine. Suppose, for instance, that an economist is asked what effect a diminution of ten per cent in the tariff would have. Assuming him to be a master of scientific method and to have all the attainable data, he could give his answer with sufficient precision to afford a basis for action. The same remark would apply if asked what effect a rise in wages would have upon the price, or how the latter would be influenced by the building of a railway across the Asiatic continent which should require a great amount of the metal. In a word, the fact that we do not know all the causes does not prevent us from predicting the effect of those causes which we do know. In this respect political economy may be compared to a science which tells a traveller exactly how *fast* a vehicle of any kind will convey him, and at what cost per mile, but cannot give him any estimate of the total expense of his journey because its length is unknown. The science will be of value to him because it will enable him to seek the cheapest and easiest conveyance notwithstanding his ignorance of the absolute expense. We may even say that any criterion which will enable him to learn which conveyance is the quickest will be of the same value whether the length of the journey is known or unknown.

Physiology and hygiene teach men the laws of healthy living, by following which they will be enabled to prolong their lives. But no science will tell a man whether he will be living or dead at the end of ten years. This, however, does not diminish the value of the knowledge he actually possesses respecting the laws of health. So the economist may be able to say to the statesman who consults him about a proposed reduction of one dollar a ton in the tariff on iron, "I do not know what the price will be after the reduction you propose; but this I do know, it will be fifty cents a ton lower than it will be if you leave the tariff unchanged, and the importation from abroad will be thirty per cent greater."

24. *Summary of Results.* The conclusions to which we are led by these considerations may be summed up as follows:

I. The ability of mankind to secure those objects of desire for which they spend a considerable portion of the labor of their lives is subject to certain laws and limitations, and is affected by a multitude of causes.

Examples of economic causes are: the greater or less abundance of the crops; the building of new railways; improvements in machinery and manufactures; changes in the fashions and public tastes on the subject of clothing; changes in the tariff on imported goods; laws to regulate labor; combinations among workmen; increase of population; the discovery of new mines of gold, silver, or other metals.

II. Some of these causes cannot be known until after they occur; others can to a greater or less extent be foreseen; while yet others are the acts of individuals or of governments.

III. Economics is the science which shows us how these numerous causes act, and thus enables us to predict the effects when the causes become known. This is done by taking the machinery of the social organism all to pieces, as it were, examining its component parts, studying their mutual action and interaction, so as to learn the separate action of each cause.

IV. But such predictions are generally confined, in the first place, to general average results as affecting either the whole mass of the community, or great classes of men, as farmers, mechanics, laborers, etc. Their effects upon each individual may thus to a certain extent be foreseen, but we need not attempt to predict how any given individual will act in consequence.

V. Such predictions are subject to the further limitation that the final result is liable to be modified by the coming into play of unknown or unforeseen causes. But this does not generally alter the relative effect.

VI. The economist has completely attained the object of his science when he has learned how to predict the effect of any cause whatever upon the interests of each class of men and not before.

CHAPTER V.

FALLACIOUS VIEWS OF ECONOMIC METHOD.

25. The object of the present chapter is to point out certain misapprehensions respecting economic method, which are closely related to the subject of the preceding chapter. The most common mistake made by those interested in the subject is that of looking upon the propositions of political economy as real or pretended absolute truths which can be applied without regard to time, place, or circumstances. The fact is that these propositions are true only under certain conditions, which conditions may or may not admit of specification. Hence no one can correctly apply the method of economics without a clear appreciation at each step of the conditions which may modify the conclusion. The following is an instructive illustration:

It is a general fact, accepted as the basis of an extended branch of economics, that by increasing the price offered for an article its manufacture is stimulated. The traders in a certain South American port once found a profitable business in purchasing a particular kind of basket which the natives supplied at a very cheap rate. The price for which the traders could sell these baskets in their own country was so many times greater than that which they paid for them that they thought to increase their profits by offering a double price to the natives for the articles. The result was, however, that instead of the natives being stimulated to produce more of these baskets the supply was actually reduced to one half. Investigation showed that the natives needed only a limited quantity of the trinkets or money which they received for their baskets, and that they could not be induced to make more baskets than would supply them with this minimum. Accordingly, when they found that

they could get their supplies in exchange for half as many baskets as they had formerly made, their inherent idleness led them to reduce their manufacture.

Here, then, was a case in which a law of economics was completely reversed. The explanation is that this law tacitly presupposes a state of things which exists only among civilized men, namely, a desire for all the money one can get and a little more. Change this condition, make man want nothing but coarse food, coarse clothing and shelter, and the whole science of economics will have to be reconstructed.

26. *The Doctrinaire's Error.* Through failing to see this dependence of all economic propositions upon certain conditions men fall into two opposite errors. The first error is that of the "doctrinaire," who makes and applies sweeping generalizations without a detailed examination of the causes which may act to modify the results which he so confidently predicts. There can be no absolute conclusions in economics, and no result can be asserted as positive, until all the causes which may affect it have been considered. What the science does for us is, not to predict the result, but to show us the methods by which we can predict it ourselves when we know the causes and have measured the influence of each cause. It is not like a map in which is laid down every stone and pitfall in some mammoth cave, but rather like a lantern in the hands of an explorer by the aid of which he can discover all the stones and pitfalls for himself.

27. *The Popular Error.* There is a large and influential body of men who view the subject from the same point as the doctrinaire; that is, they assume that economic science should be, or at least that it pretends to be, a complete body of doctrine which will enable the inquirer to get at truth by purely deductive reasoning. When they find this supposed pretension to be wholly unfounded, they conclude that we must either reject or completely reconstruct the science. We call this

view the popular one because it is one which men seem naturally prone to take. When the men who have studied economics in college go out into the world, they find that the phenomena they actually meet with are much more complex, and are affected by a much more intricate combination of causes, than are presupposed in the science they have learned from their books. In studying the latter they have been led to consider the science as something exact and positive; and as they gradually find by experience of the world that it is neither exact nor positive, and that the actual course of trade often deviates from that which they supposed to be marked out by economical theories, they too hastily conclude that the latter are worthless. The fact is that this defect is inherent in all science when we consider the latter in its practical applications. For example, the engineer student begins by learning a science which is called mechanics. If he applies the results of this science without any modification or allowance for circumstances, he will find his calculations contradicted by the facts.

Owing to this necessary defect a disposition to undervalue the practical usefulness of pure science is prevalent among all classes. Yet without science we should have nothing but vague speculation, inconclusive reasoning, and general confusion of thought; while with it we have a collection of principles which, although they cannot be blindly applied, are nevertheless of inestimable value to one who understands them.

A careful consideration of the process of abstraction (§ 15) will enable the student to see the origin of this difficulty in applying scientific conclusions. It is that the conclusions of pure science necessarily presuppose that no other cause than those which it considers comes into play. Now it is impossible in economics to consider every possible cause which may modify the result. All we can do is to trace out the action of general far-reaching causes as they affect great bodies of people, leaving it to the individual himself to see how they are modified by the peculiar circumstances of each case.

Some writers require much more of our science than that it

shall be applicable without modification to the most complex phenomena of human society. They also demand that it shall be applicable to every state of things which their imagination can invent or their research discover. It is sufficient to say that such a requirement can proceed from nothing but defective knowledge, since no science whatever in any form could fulfil such a condition.

28. If, in thus rejecting all economic propositions, men had nothing to substitute for them, their views would have at least the merit of consistency. But there is a popular method of thinking on the subject which consists in tacitly assuming that whatever is seen to follow any cause is the effect of that cause. For example: to the question, "How would you determine the effect of a change in the tariff?" the answer of the majority is, "I would wait and see the effect." This method is defective because every fact that we can observe is the product of a multiplicity of different causes. For example, a fall in the price of iron may arise from the discovery and opening up of new mines, from a falling off in the building of railways, from a diminished demand from abroad, from the discovery at home or abroad of improved methods of manufacture, as well as from a change in the tariff. In consequence it might well happen that after the tariff on imported iron was raised the iron would be cheaper than before, and that it might be dearer after the tariff was lowered. It would therefore be illogical to conclude that the fluctuations in price were due to any one cause until all the causes were investigated. This example should make it perfectly clear to the student that there is no rational method of tracing cause and effect in economics, except to begin by considering the action of the various causes one at a time.

But the main defect of the popular method is that of ignoring what we may call the *self-sufficiency* of man, and of looking upon man as a victim of blind forces which he follows as a leaf follows the course of the wind. The fact is that men in making their bargains and doing their work are not the creatures

of any such forces. They may be relied upon to take the best possible measures for guarding their own interests, and their movements are determined by their own wills and not by any blind laws which we can formulate from statistics.

29. This way of looking at economic phenomena is so natural that some illustrations of its dangers may be adduced. Let us suppose an investigator seeking to learn the relation between quinine and the public health by statistical observation. He might reason thus: "If quinine conduces to the cure of intermittent fever, then where people take most quinine they will have least intermittent fever, and each new importation of quinine will be followed by an improvement in the public health. But looking at the facts of the case, we find them to be directly the reverse of this. In the low lands along the lower part of the Mississippi valley and among the swamps of the Gulf States people take more quinine than anywhere else in the country. Yet, far from being more healthy, they suffer from intermittent fever more than any other people. Not only so, but we find that the large importations of quinine which take place annually in the summer are regularly followed in the autumn by an increase in the frequency of intermittent fevers. Therefore let the advocates of quinine propound what abstract reasons they please, the facts are against them and show conclusively that quinine causes intermittent fever instead of curing it."

This example belongs to the class which the reader who desires to train himself in habits of accurate thought should study very closely. What is the defect in the logical process by which the conclusion is reached? We have a phenomenon, intermittent fever; we have a cause, quinine. The relation of the two is fully proved. The only question that can arise is whether the fever is the cause of the quinine or the quinine the cause of the fever. Since the introduction of the quinine precedes the annual breaking out of the fever, we have in the former hypothesis the apparent difficulty that the effect comes

before the cause. To the average unthinking man, looking at society from the outside, this difficulty would be insurmountable. But when we recognize in men the quality of adapting means to future ends, we see that if we arrange events according to the order in which we observe them the effect may precede the cause. The general cause of the annual importation of quinine is the belief on the part of great bodies of men that the fever will break out. Now, belief is a mental state leading to action on the part of men; and if we ignore it, and the consequent adaptation of means to future ends, we not only lose a valuable means of explaining economic phenomena, but we run the danger of falling into error.

The reader may inquire whether there is really any danger that people should fall into errors so gross as that above supposed. We reply by asking, Why do they not fall into that very error? The reply to this last question is that the error itself is so obvious that there is no danger of falling into it. The common-sense of the average man familiarizes him with the whole process. Common-sense is the lantern by which he sees the relation of things. But if the process is not familiar to him, if this lantern does not shine, then he is in darkness so far as this way of seeing his error is concerned, and he will inevitably fall into mistakes of the kind above illustrated. We have only to read the newspapers and the writings of great numbers of intelligent men to find any quantity of reasoning of the form of that above given; and how are we to know when its conclusions are right and when they are wrong?

30. At first sight it may seem discouraging to the student to ask him to devote much close thought to a science all of whose rules and conclusions are imperfect. But there is no occasion for such discouragement. If he has carefully mastered the spirit of this and of the preceding chapter, he will see that the imperfections which we have just been describing are only those which are common to all human knowledge. No knowledge of the future affairs of mankind is perfect, because we

cannot possibly tell what causes may come into play to disappoint our expectations. But notwithstanding these imperfections, we can form more or less probable judgments of the action of causes and effects in the world generally which are of the greatest value. The imperfections of political economy are less than those of meteorology.

We may compare the prediction of a specific future economic event to an attempt to predict the weather on the 8th of January of some future year. We can make no such prediction with any approach to certainty. Are we to conclude from this that no attempt to foresee changes of weather and of seasons is of any value? Not at all. We know that the seasons go through an annual course; that the weather is hot in July and August, and then on the average grows colder until January. We make our plans for seed-time and harvest, for winter fuel and summer journeys, with well-founded confidence that the changes of seasons will go through their regular course. Now, rejecting the conclusions of political economy on the ground that, being uncertain, they can be of no practical value is like rejecting all the rules about seed-time and harvest because meteorology can never tell us what kind of weather we shall have on any particular day. We must do in economics just as we would do in the scientific investigation of all other general causes. We must frame hypotheses which shall come as nearly as possible to the general average of things as they exist in the world. Every observing man has fairly clear ideas as to how men in general act; that is to say, he has a certain conception of an average or typical man. From this type every man we meet may differ in some detail, yet it strikes a general average amongst them. But it does not at all follow that we are to stop here and assume that no other man than this average one exists. We may go on and classify men in regard to their differences from the average man to any extent we please. What we have to do is to be careful that our classification corresponds as nearly as possible to the actual characteristics of men.

We have to carry the same system through our whole study. We must at every step distinguish between far and wide reaching average causes affecting large classes of men, and the temporary disturbing causes which sometimes act in one direction and sometimes in another. By proceeding in this way we shall find human society to be a most interesting and satisfactory object of study, in which we can trace the action of cause and effect with nearly as much certainty as we can trace out any system of natural operations going on in the world.

31. With fallacies respecting economic method we may associate certain imperfections in ways of thinking to which mankind are prone, and which every student of science should carefully train himself to avoid. The most common defect of this kind is that of confounding statements of how things are with statements how we would like them to be, or how things might or ought to be. Those who pursue inquiries in a purely partisan spirit, for the purpose of proving some theory or bringing about some result, are naturally prone to this defect. The defect sometimes reaches such proportions that the person affected by it becomes incapable of understanding a truth simply as a truth, and cannot conceive the state of mind of one who describes things as they are without any ulterior purpose.

Now science is primarily concerned with things as they are. Just as no astronomer ever claimed that Jupiter was any too large, or that those nearly invisible little planets which are being discovered every year are a great deal too small, so the economist, considered as a purely scientific inquirer, pursues his investigations without any spirit of praise or depreciation. His business is to describe human society exactly as it is, feeling that the question how he would like it to be, or how it ought to be, belongs to another branch of the subject.

It does not follow from all this that the student of economics or any one else should divest himself of human sympathies and refuse to consider what men ought to do to promote their interests. It is not necessary that he should absolutely confine

himself to what we have above defined as the field of scientific economics. But what he must carefully do is to distinguish between his thoughts as a scientific economist and his feelings as a promoter of human welfare. The defect we have described does not consist in a person feeling an interest in how things ought to be, and how ends can be attained, but it consists in confusing this feeling with statements of fact. We cannot form the best judgment of what society ought to do to promote its own welfare until we understand as well as possible what the state of things in society really is. We must therefore begin by studying economical causes without any sentiment of praise or blame, and without any feeling that we wish they were otherwise or that we are glad they are as we find them. When we have done this, and not before, we shall be able to form an intelligent judgment about questions of the policy which society ought to pursue in order to secure its own well-being.

A common mistake is that the conclusions of the plain unlettered man differ from those of economists in being more immediately founded on observed facts and less on deduction. The truth is that the plain unlettered man is more prone to rely on deduction from unproved hypotheses than the economist is. All classes must equally use deduction, because it is only by this logical process that we form any conclusion about the future effect of any present cause. Drawing the conclusion that rain will follow a certain direction of the wind with certain appearances of the clouds is an act of logical deduction. The main point in which men's logical methods differ lies in the care with which hypotheses are formed by induction from observed facts, and the readiness of men to test them. Now it is the plain man who is most prone to form hasty generalizations from insufficient facts, to consider the conclusions which he thence deduces as final, and to be blind to all facts which do not tally with his theory. One object of science is to train men into the habit of carefully taking account of all facts whether they do or do not agree with their hypotheses.

ILLUSTRATIONS AND EXERCISES.

1. By virtue of the force of gravitation acting on its waters, a river tends to flow in a smooth and equable course from its source to the sea.

The doctrinaire is one who hence concludes that all rivers flow in straight lines to the sea, and rejects all testimony that the course of many rivers is exceedingly tortuous.

The "practical" or unscientific economist is one who, finding the river to wind about in all directions, denies or ignores any special tendency in its waters to approach the sea, and regards the idea of those waters being urged forward by any one single force, like that of gravitation, as entirely illusory.

The common-sense economist is one who recognizes all the meanderings of the river, yet never forgets that its waters are at every point of their course urged toward the sea by the single force of gravitation, and that they change their direction, not because the force is nullified, but because its direction is modified by the hills, rocks, and other obstacles it is continually encountering. So, in economics, he never forgets that the one cause which keeps all the wealth-getting processes in operation is the desire of wealth by each individual man, and never fails to recognize any case in which the action of this cause is modified by circumstances.

2. It is laid down as a general principle in economics that there cannot be two rates of wages in the same community for the same kind of work. A man was discovered in New York who paid his coachman twice the wages that other people paid for the same services for no better reason than that the coachman had been a favorite of his father's. To what extent, if at all, is it necessary to modify the doctrine of the equality of wages in consequence of this discovery?

3. Can you give any reasons for or illustrations of the proposition that the impartial study of things as they are must *precede* our consideration of any or all questions of policy?

4. Consider the following view of the cause why men tend to congregate in great cities; state your opinion of its correctness, and, if you think it wrong, state the cause in a form which you consider correct:

"Men tend of necessity to gravitate towards their fellow-men; the greater the number collected in a given space the greater is the attraction there exerted—as is seen to have been the case with the great cities of the ancient world, and is now seen in the great cities of modern times. London and Paris may be regarded as the rival suns of our system, which exercise a strong attractive force; and were it not for the existence of a counter-attraction of local centres like Vienna and Berlin, Florence and Naples, etc.,

Europe would present to view one great centralized system, the population of which was always tending towards those two cities, there to make all their exchanges and thence to receive their laws." (CAREY, *Principles of Social Science*, Chap. II. Sec. I.)

Consider principally the question whether if the lesser capitals did not exist there would be a greater tendency towards the great ones. Is there any such attraction as that described, and, if so, what is its nature?

5. "Science requires laws, and laws are but universal truths, truths to which no exceptions can be found." (*Ibid.*, Chap. I. Sec. VI.)

State under what limitations of meaning, if any, this proposition is correct. Can you think of any law which will enable you to foresee what will happen to-morrow with absolute certainty? Is there any law to which no exception can be found? If not, is it fair to suppose that laws are of no use?

6. Were you to invent a new form of steam-engine and could you find but two persons to consult with, the one a practical engineer who had spent his life in running a particular kind of engine but knew nothing of the theories of thermo-dynamics, the other a mathematician who had mastered thermo-dynamics but had never seen an engine at work, which would you regard as the better authority for advising you how your engine would be likely to succeed?

Can you form any general definitions of the class of questions which could be best answered by the mathematician and the class which could best be answered by the engineer?

7. Can you apply any general principles of the kind suggested by the preceding question to the case of advising a government on a financial question? If the Mexican Government desired to raise a loan in the New York money market, would it act more wisely in consulting the bankers of New York or the political economists? If it proposed to introduce a new system of currency such as had never before been tried, ought it to consult the bankers or the economists?

8. In continuation of the same subject. If we admit the principle that men of most experience should always be consulted upon a difficult question, in what class of questions should we say that practical bankers had more experience than economists, and in what class should we say that economists were more experienced than bankers?

9. Examine and criticise the following objection to the practical value of scientific method:

Scientific method considers the course of events as going on in accordance with certain formal laws the results of which it shows us how to predict. Now if all the phenomena with which men are concerned went

on in this formal way, our scientific method would be very valuable. But in fact, a great majority of the events with which men are concerned are the result of such a multitude of causes that they cannot be reduced to these simple laws. Scientific method is of no value in such cases, and the result must be a matter of practical judgment.

Consider the soundness of this proposition in the light of such questions as the following:

Is scientific method *more* or *less* necessary because we cannot formulate a set of principles which can be applied without modification to all cases? If a new kind of railway bridge is to be built, it may be found that no experience gained from other bridges and no calculations made for them will apply to the case of the new bridge under contemplation. Does this inapplicability of experience render scientific method *more* or *less* necessary in making calculations for the proposed bridge?

10. Compare the following two cases: first, that of a miserly selfish man whose energies are devoted entirely to the accumulation of wealth for himself; secondly, that of a man who devotes his labor and his fortune to the relief of suffering humanity. Is there any difference in the method of investigation which we have to apply to the two cases? Is it or is it not true that the men are equally following the bent of their nature; and that the relation between their nature and the acts which we see them perform are the same in the two cases?

Nearly all of us contemn the first of the above men and love the other. Is the existence of these sentiments of love and contempt of use or benefit in the work of analyzing the acts of the men?

11. Examine and criticise the following objections to the method and hypotheses of political economy as laid down in Chapter IV.:

I. We cannot make these general hypotheses of human nature the basis of any reliable investigation into economic phenomena, because these phenomena depend upon a great variety of circumstances not included in the hypotheses. Every successive generation is placed under new conditions, and the circumstances which surround every people are different in important points from those which surround other peoples.

II. It is very unsafe to assume that men always act reasonably in adapting means to ends. The fact is, man is a very uncertain and variable being, and it is a good deal safer to assume that we find him just as we see him act than to frame any theories founded on his nature or mental constitution.

III. The conditions of different nations being different, we cannot frame any system of political economy which will apply to more than one nation. Hence any idea that there is a general science of economics is without foundation.

With reference to the first objection, consider and decide whether in

assuming the hypothesis of § 18 we are obliged to ignore any of the conditions or circumstances which surround mankind.

In reference to the third question, consider whether there is anything common in the economic phenomena of different civilized nations. Is the general system of producing, transporting, and selling goods radically different in Germany, England, and America—that is to say, are there any features of these processes common to all these countries?

12. What is the fallacy, if any, in the following reasoning?

Where we see fine marble houses, public fountains, and paved streets we know that people are wealthy. Therefore if a community would become wealthy as fast as possible it must proceed to the erection of marble buildings, the paving of streets, and the construction of fountains as rapidly as possible.

13. When in 1885 the government invited bids for supplying iron beams for the new War Department building in Washington, it was found that the lowest bidder knowingly agreed to supply the beams below the lowest price at which he could buy them. Is it to be supposed that he did this from patriotism, from a desire to benefit his country, or from other motives forming an exception to the hypotheses of economics?

BOOK II.

STRUCTURE AND FUNCTIONS

OF THE

SOCIAL ORGANISM.

BOOK II.—DESCRIPTION OF THE SOCIAL ORGANISM.

DIVISION A.—DEFINITIONS AND OUTLINE.

CHAPTER I.

OF WEALTH AND ITS ASSOCIATED CONCEPTS.

1. *Remarks on Economic Nomenclature.* An exact nomenclature is one of the first requirements of an exact science. But economics is so peculiar in its nature as to render this requirement very difficult of fulfilment. In most other sciences things are classified according to their own inherent qualities. But in the present one things have to be classified, not merely with respect to such qualities, but rather according to their relation to human desires. We have to associate things so purely mental as human hopes and fears with things so purely material as ships, ploughs, and steam-hammers. Thus we encounter the necessity of arranging things with reference to the mental emotions which they are calculated to excite. One consequence of this is that an object which may belong to one class if owned by one person may belong to a different class when he sells it to his neighbor. Such anomalies are inherent in the subject, and can be reduced to order only by the reader keeping well in mind what is meant in each particular case where terms of peculiar signification are applied.

As a rule, no new words have been introduced into economics. What has been done is to extend and generalize the meaning of familiar words. Such words we shall now proceed to define.

2. *Labor.* In its widest economic sense **labor** is any exertion of the human faculties for the attainment of a definite object. This definition is merely an extension of the familiar one. The latter includes only physical exertion. But in economics the exercise of the judgment and imagination finds as important a place as that of the body. Hence the mental occupations of the lawyer, the author, the clergyman, and the actor belong to the same class as the bodily exertions of the common laborer. They are equally necessary to the gratification of the general desires of the community.

Although no harm would result from our using the word labor in the above extended sense, yet in practice we limit it as follows: *Labor is exertion of the human faculties devoted to the production of any object or effort for which other persons than the laborer are, or might be, willing to pay.* In familiar language, labor is all that any one does in order to make a living.

3. *Wealth.* In economics the term **wealth**, in its widest sense, designates all those things which men gain by labor, and employ to gratify their desires.

Economists have sometimes been divided on the question how far anything not material could be considered wealth, and also whether the term should be confined to objects the use of which could be transferred from one person to another. It will not be profitable at the present time to enter into a discussion of this question further than to say that it seems advantageous to consider the word in its more extended sense; but, at the same time, to confine it to actual objects of desire, material or immaterial, transferable or not. The understanding of the definition will be facilitated by enumerating the principal classes of objects which may be included in the term. They are:

I. All the lands and mines of the country to which labor has been applied to make them productive of edible plants, of animals, or of minerals.

II. The improvements in and upon the land designed to facilitate production, such as roads, fences, storehouses, barns, etc.

III. All appliances which men have made for the manufacture, transportation, preservation, and sale of the products of industry, including railways, manufactories, etc.

IV. The houses in which we live, together with the furniture, pictures, and everything else which they contain intended to promote our ease and pleasure.

V. All products undergoing the processes of manufacture, transportation, and sale to those who finally use them.

VI. Clothing, food, books, and all other manufactured products in possession of those who are to wear or use them.

VII. The skill, business ability, or knowledge which enable their possessors to contribute to the enjoyment of others, including the talents of the actor, the ability of the man of business, the knowledge of the lawyer, and the skill of the physician, are to be considered wealth when we use the term in its most extended sense.

If, instead of discussing the definition in detail, we inquire what is the understood sense in which the word is used in economics, we shall find the definition to be: *Wealth is that for the use or enjoyment of which people pay money.*

4. *Of Property or the Right to or Ownership of Wealth.* It is necessary in every branch of economics to bear carefully in mind the distinction between the objects, material or immaterial, which constitute wealth, and the *ownership of* or *rights in* those objects, which secures the proper party in the enjoyment of the wealth. In many cases it is difficult to make the distinction, owing to the very general or abstract nature of the object possessed; but its importance requires a very careful and critical examination on the part of the student. The understanding of the subject will be facilitated by taking it up in special cases, beginning with the most familiar ones, before we proceed to any generalization.

Here is a suit of clothes. That suit of clothes is capable of protecting some one person from the inclemency of the weather. Since it can protect only one person at a time, it follows that there must be some law or general understanding to determine a person having an exclusive right to it. The person so determined is called the *owner* of the clothing; the clothing is called *his property;* he has the sole *right* to the use and enjoyment of the clothing, and this right is called *ownership.* We have thus four words all of which are relative: *owner*, which designates the person, but which also implies his relation to the clothing; *property*, which designates the clothing in its relation to the owner; *ownership*, which designates the relation between the two; and *right*, which may be considered as giving force to this relation. The word *wealth*, on the other hand, designates the object absolutely; that is, not in its relations to any particular person. So far as the mere object is concerned, property means the same thing as wealth; it differs in being relative to some owner.

If this distinction of absolute and relative terms for the same object offers any difficulty to the student, he may make the subject clear by considering that a body of men may all be brothers. Hence to a certain extent man and brother may mean the same thing. The difference is that the word *man* is an absolute term designating the individual just as he stands, whereas when we call him *brother* we imply his relation to somebody else, either a sister or another brother. Of the same general nature is the difference between the word *wealth*, which is either absolute, or relative only to the community at large, and *property*, which considers it relative to the owner.

5. *Of the Owners of Property.* The owner of property may be an individual, a society, or an indefinite number of individuals called the public, whose collective personality is embodied in a conception called *society*, the *government*, or the *state.* Any individual or society legally capable of becoming an owner of property is called a **legal person**, or simply a

person. Examples of such persons are mercantile firms, banking and railway companies, and incorporated societies, as well as individuals of legal age.

Different Forms of Ownership. Considered in its relation to the three classes of owners, property may be divided into *public*, *joint* or *corporate*, and *individual*.

Public property we may consider to be owned by the state, or by society at large. The roads on which we travel in the country, the streets and pavements of a city, the fountains and statues which ornament it, and the pipes which supply it with water, are examples of this sort of property. That is, all these kinds of wealth are equally possessed and enjoyed by everybody who can use them.

Joint property is that the owner of which is any definite body of persons. When this body is specially organized by law it is called an incorporated company, and the property is called *corporate*. In economics we have no occasion for any distinction between corporate and other forms of joint property.

Individual property is that owned by an individual. Each member of an association has an indirect or secondary right in the wealth owned by the association, so that there are two distinct orders of ownership. An example of this is afforded by a railway. The wealth is not only the railway itself, but the buildings, engines, cars, and other appliances necessary to its running. The owner of the railway as a whole is a body of men called a *railway company*. Considered in its relation to this owner, the property in the railway is called **stock**, and the stock is divided up into small parts called **shares**. The shares again are possessed separately by the individual men who form the company, each man owning a certain number, which are then his individual property. Here we have no difficulty in distinguishing between the stock or shares, which make up the several properties of the individual owners and the wealth consisting of the railway itself and the various appurtenances connected with it, which

exists independently of changes in the ownership. The same principles apply to manufacturing and commercial companies.

The individual ownership of wealth is subject to an infinite variety of modifications. In economics the most important modified forms are credit and divided ownership, which we shall next define.

6. *Credit.* The right held by the owner of credit is that of requiring from some other person or owner at a future time the payment of a designated sum of money. The holder of the right is called the *creditor;* the person against whom he holds it, the *debtor.* The debtor, whom we may consider as the present owner of the money to be paid, may be any kind of legal person, an individual, a company, or a government. But the right possessed by the creditor is apparently neither the ownership of anything which comes under our definition of wealth, nor that of any material object. The right to demand money from another party is not the same thing as the ownership of money. Let us take for example a promissory note by which the drawer, D, is under an obligation to pay the holder, A, a sum of money. Now although ideally this sum of money is a certain weight of gold or silver, yet there are no particular pieces of gold or silver which constitute the wealth. It may very well happen that the sum of all the moneys to which the members of the community have rights expressed by promissory notes exceeds many times over the money which actually exists in the community.

The difficulty in this case will be avoided, and the case brought under our general definitions, by looking at another feature of the case. Every *right* of this class is accompanied by a corresponding *obligation* on the side of another party; and the right and obligation are mutual and equal in amount: where one ceases the other ceases also. There cannot be a creditor without a debtor. Now the most accurate way to consider the subject is to regard the *right* possessed by the creditor as algebraically *positive* property, and the equal

obligation on the part of the debtor as algebraically *negative* property. The sum total of property possessed by the community is not altered by one member owing another; because equal credits and debits cancel each other, just as positive and negative quantities do in algebra when they are added.

Thus, if D is indebted to C in the sum of x dollars, we conceive that D's ownership does not extend to the whole of the money or other wealth which is in his possession, because such ownership is diminished x dollars by the debt. If w represents the whole quantity of money which he is to possess when the debt becomes due, his property in that money is $w - x$, and C's property is x. The sum of these properties makes up w, the quantity of money in question.

7. *Divided Property.* Credit involves a special kind of divided property. But there are modified ownerships of many kinds, of which the following is the most important.

A person may have a right of property in an estate, not by virtue of owning any part or share of it, but by enjoying the right to demand from its owner, no matter who he may be, a sum of money, and to seize the estate, or require its sale, in case the corresponding obligation on the part of the owner is not fulfilled. The property owned in this case is in the nature of credit, but it differs from the credits described in the last article in that the property inheres in a particular piece of wealth, namely, the estate which is pledged to the payment of the debt. The property is then divided between the two owners as follows: if x be the total value of the estate, and n the amount of the debt upon it, the creditor's share will be n and the owner's share of the estate will be $x - n$. Both values together will make up the value e of the estate, as it should. The method of representing the property algebraically is the same in the case of simple credit.

Debts of all kinds come under the rule that they are necessarily offset by corresponding obligations on the part of some one, and therefore form no part of the total property of

the community. In the case of government, state or municipal bonds of any kind, the debtors comprise all the property-owners in the community, who must be taxed to pay the debt, and in any estimate of the total value of property each man's share of the amount due should be subtracted from the value of his individual possessions. The result of the correct application of all these principles is that we can form an estimate of the total value of all the wealth of the country which shall be quite independent of the particular rights of property in that wealth.

8. *Illustration of the Difference between Wealth and Property.* The importance of keeping in mind the nature of wealth, irrespective of the rights of property in it, will be made clear by an illustration. In the year 1837 a commercial crisis unparalleled in its intensity swept over this country: failures in business were seen on all sides; those who did not fail had the greatest difficulty in making good their debts; workmen were thrown out of employment, and a large majority of the people felt that they had suddenly become poor. In ordinary language, their wealth was swept away as by a hurricane, and in all descriptions of the crisis it was alluded to as a destroyer of wealth.

And yet if we look at the case from a common-sense point of view we shall see that no wealth at all was destroyed. There were just as many suits of clothes in the country the day after the crisis as there were before, and they were just as well fitted for wearing. The mills and factories were all in as good order, the farms as fertile, and the crops as large before the supposed hurricane as after. The houses remained standing, the wood was in the woodsheds ready for burning, and the food in the larder ready for cooking, just as it had been left. In a word, every appliance for the continued enjoyment of the fruits of labor remained as perfect as it ever was. It is true that many found it difficult to purchase the necessary food and clothing although it existed in the granary and shops. But

this is simply saying that there was a difficulty in arranging the terms and conditions of sales between the owners of the food and clothing and the people who wanted them. What the change in the state of things really consisted in cannot be explained until we have reached a more advanced stage of the subject, but it is perfectly clear at this stage that it did not consist of any destruction of wealth.

9. ***Transfer of Ownership.*** In most cases the ownership of property can be transferred by some simple process from one person to another. This transfer consists in one person taking the place of another in that right to the wealth which is called ownership. It is made in various ways. In the familiar case of sale of personal property, the first owner, called the seller, places the property in the possession of the second one, called the purchaser. In case where the purchaser cannot conveniently take possession of the property it is transferred by an instrument in writing known under various names: a *deed* or *conveyance* when the property transferred is real estate; a *bill of sale* when it is personal property; a *cheque* or *bill of exchange* when it is credit.

10. ***Commodity.*** The term **commodity**, in economics, means any special kind or collection of wealth. It is usually confined to goods for sale in the public markets, such as clothing and food, and in general to particular portions of wealth considered in their relation to any one who wants to possess and enjoy them.

11. ***Capital.*** Capital is a kind of wealth. That is, all capital is wealth, but not all wealth is capital. But what kinds of wealth shall be considered capital and what not is a question which cannot be fully understood until after a thorough study of the subject. It will suffice at present to say that capital consists of all that wealth which the owner is keeping, not for its own sake, but in order that he may by its means make

it the instrument of acquiring further wealth. For example, tools are not kept because they satisfy any desire of the owner, but because they can be used in making things which do fulfil this object. Hence they are capital. The term also includes machinery, buildings designed for manufacturing purposes, and the raw material which is stored away in order to be manufactured into articles of utility. But the clothes we wear, the food we have stored in our houses for eating, and the beds on which we sleep are not capital, because they are kept in order to be immediately useful.

To the beginner it will not be evident why this distinction should be made between wealth which is and wealth which is not capital, but we shall see later that it is of fundamental importance in questions involving the interests of society.

Note on the Definition of the Word Property. This word is used in the present chapter in its popular rather than in its strictly legal sense. In the latter sense such words as "property," "estate," and "farm" do not mean *things*, but *rights*. An *estate* is not fields and buildings, but the right to ownership in fields, buildings, or other wealth. A *farm* does not mean a cultivated piece of ground, but the right to cultivate the ground and dispose of the crops. So property is not wealth, but the exclusive right to the possession of wealth. Whether it would conduce to clear thinking in economics to confine such words to their purely legal sense is a question well worthy of consideration. Mr. HENRY DUNNING MCLEOD in his *Elements of Economics* insists very strongly on the legal meaning of these words, and considers it a positive error to apply them to things. It is certain that in the case in question the general and popular meaning of the words referred to is wealth, considered not in itself, but in relation to its owner. Since this relation necessarily implies the right of the owner to it, the two ideas of right and thing in which the right inheres are inseparable. It does not therefore seem that any confusion will arise from the double sense in which the word is used. When one transfers property, it amounts to the same thing whether we say that what he transfers is the right or the thing. On the other hand, the restriction put upon the definition by Mr. McLeod has led him to conclude that wealth may comprise "abstract rights, quite separate and severed from any material substances," which does not sufficiently distinguish the right from the thing.

CHAPTER II.

OTHER DEFINITIONS.

12. *Production.* The act or process of applying labor in such a way as to bring wealth into existence is called **production.**

As commonly used this word applies only to changes in the raw material of which an article is composed. If we watch the process through which a lump of iron ore is changed into a keg of nails, we shall find the material smelted, hammered, put into a car, conveyed to a city, and passed through a machine. All these operations are included under the term *production.* It is true that transportation from one place to another is not, in familiar language, called production, but it must be so called in scientific nomenclature, because in order to enjoy an article it must be brought within our reach, and the act of so bringing it belongs to the same class with that of making it.

13. *Exchange.* In the most general sense of the term **exchange** consists in a mutual transfer of the ownership of two properties. A transfers to B his (A's) right of property in some commodity in consideration of B's transfer to him of some other and equivalent right.

The necessity of exchange arises from the circumstance that no one person can produce more than a minute fraction of the wealth which he desires to enjoy. When, as in the savage state, each individual or each family supplies its own wants, there can be no considerable enjoyment of wealth. If each man among us should attempt to make boots, clothing, and hats, to build houses, to paint and plaster them, and to furnish them with everything necessary for comfort, he would miserably fail. But when, as in civilized society, each person de-

votes himself to the production of a particular kind of wealth, the sum total of wealth produced is incalculably greater than when each person tries to make everything. Now in order that this increased production of each kind of commodity may be enjoyed by others than its immediate producer, there must be a transfer of ownership from the producer to the persons who are to enjoy the commodity. Hence arises a system of mutual exchange in which each receives a supposed equivalent for what he gives.

Exchange is of two kinds, *barter* and *sale*.

Barter is the exchange of one commodity for another, in the case when each party receives from the other some commodity which he desires to make use of. For instance, if the owner of a yoke of oxen desires to exchange them for a horse, and finds a person who having a horse desires a yoke of oxen, the exchange of ownership would be barter.

The necessity in barter that each party shall find another between whom and himself there shall be a mutual desire for the exchange of commodities renders it impracticable on any considerable scale in a developed society. Occasionally we hear of a man bartering a horse for a carriage, or a farm for a city residence, but the transaction is too rare to be specially considered in economics.

In all societies advanced beyond the barbarous state exchange is affected by the use of a metal to which the term *money* is applied. The exchange of a commodity for money is called **sale** in relation to the one party and **purchase** in relation to the other. To illustrate the great advantage of sale over barter, let us suppose that the maker of a pair of boots desires to exchange them for a hat. It would be necessary for him to search diligently for some one person who wanted a pair of boots and who had a spare hat to exchange for them. Perhaps he could find no such person. He might find a number of owners of spare hats and a number of seekers of boots, but unless the two desires to part with the hat and to receive a pair of boots were merged in one person his search would be

useless. But by the use of money it is only necessary that he should first find some one who desires his boots and then some one else who has a spare hat, and by sale in the one case and purchase in the other the desired exchange is effected. For this reason money is often called the **medium of exchange.**

14. *Consumption.* It is a universal characteristic of wealth that it is gradually used up or consumed in the very act of gratifying the desires of its owners. The gradual wearing out of a coat and its consequent reduction to the state of rags is typical of this process in its ultimate form. The length of time occupied by wealth in the processes of consumption is, however, very different with different kinds of wealth. The words and gestures of the actor are consumed at the moment, and die in the very act of pleasing his audience. The faculties and skill of men die away in old age and entirely disappear at death. Clothing is consumed in a few months or years according to circumstances. In the case of houses a continual process of consumption is going on through the decay and disintegration of material produced by time and the weather. But for many years and even centuries this consumption may be neutralized by new acts of production in the form of repairs to the house. Ships and machinery wear out in the course of a few years. A canal so far as we know may be preserved through indefinite periods with the aid of occasional repairs. Without this it will in the course of time be effaced through the operations of nature. This wearing out of wealth is called **consumption.**

Productive and Unproductive Consumption. In the case of houses, furniture, clothing, food, and other articles the commodity is gradually consumed in the very act of gratifying the consumer, and eventually disappears as wealth. The house after decaying, the coat after being worn out, and the food after being eaten no longer have the properties of house, clothing, or food. This process of losing useful properties is called *unproductive consumption.* But in the process of

manufacture wealth is continually being consumed for the purpose of reappearing in a new and more useful form. For example, the wool of the sheep disappears as wool when it is woven into cloth. The cloth can no longer be used or sold as cloth after it is made into a coat. We conceive in these cases that the wool and cloth are really consumed to reappear in the improved forms of cloth and a coat respectively. This disappearance to reappear in a new form is called *productive consumption.*

The question may be asked, Since the material of the wool remains through the whole process, and actually exists in the coat, why talk of consumption at all? We answer this question by viewing the case in other aspects. Consumption does not consist in the annihilation of matter, for if it did there would be no consumption at all. The ultimate molecules of matter do not admit of change or decay. Consumption consists only in a change of the form and relations of the molecules. Nearly all the cotton that went into your shirt is still there after the shirt is a pile of rags in the paper-mill. In no case, therefore, is consumption anything but a change in the form of matter. We therefore say, in economics, that any particular kind of material is consumed when its form is so changed that it loses its original properties or qualities. Now, after the wool is made into cloth it has lost the property of being conveniently carded and spun and is no longer available for many purposes to which it could originally have been put. It is therefore consumed. So, also, the cloth after being made into a coat is good for nothing except as a coat; it can no longer be used as blanket or made into a pair of pantaloons. We therefore say that it is consumed. But because in the act of consumption a more useful form of wealth has been produced we call the consumption *productive.*

In order that consumption may be productive it is not necessary that the identical wealth consumed should be reproduced in the new form. The consumption of oats and hay by a horse may be productive. The new form of oats and hay

will be whatever wealth the horse may be enabled to produce. If he takes wheat to the mill to be ground, the food he has eaten may be considered as reappearing in the form of flour. The consumption of the iron and brass which enter into the machinery of a cotton-mill results in the formation of cloth, and not in any new form of the metals which went into the machinery.

The distinction between the two kinds of consumption may be condensed as follows: Wealth being necessarily consumed in the process of satisfying the wants of man, we say:

If the owner of wealth is consuming it, or allowing it to be consumed, not for his own immediate satisfaction, but in order that he may sell the result of the consumption to others, then the consumption is *productive*.

But if he is consuming it for his own satisfaction or that of his family or friends, the consumption is *unproductive*.

15. We perceive that the object and result of the operations we have described is that men may enjoy wealth. These various operations may be divided into three classes—*production*, *transportation*, and *exchange*. The first consists in mechanical operations upon the sheep, the wool, the yarn, and the cloth, which operations were performed by labor with the aid of capital, and are called tending, shearing, combing, spinning, weaving, cutting, making up, etc. Since each of these operations adds to the value of the product, they are all productive.

The earlier economists were divided over the question whether transportation should also be included in the same class as production. It is, however, obvious that the transportation was just as necessary a condition of the coat being worn as anything else; it should therefore also be considered as production. But exchange has always been considered separate from production. Yet so far as the mere operation is concerned, the process of exchange is just as necessary to our having the coat as any other process was. It involved a certain amount of labor, namely, the labor of building a warehouse to hold the

cloth or the coat until we should want it, and the labor of taking care of it during this interval, as well as that of doing it up in proper shape and receiving the money paid for it. It is convenient to have a separate term for this necessary labor involved in the mere operation of exchange. We shall therefore call it **friction of exchange.**

The operation of exchange, however, involves something more than the mere performance of labor, namely, the use of money and credit. Money and credit may be considered as forming a certain mechanism by which exchange is effected; they have therefore been treated under the head of the mechanism of exchange. This mechanism involves other forces than friction. Being one of the essentials to our enjoying the coat, it is an element in the social organism of the same importance with capital and labor.

16. *Value.* We can readily understand that under a system of barter the question would continually arise *how much* of one commodity should be given in exchange for another. If a man with a pair of boots to barter found one person offering him a hat in exchange, a second a coat, and a third a barrel of flour, he would have no ready means of deciding which offer was the best, or whether any of them would be advantageous. But when a commodity is *sold*, the owner receives a definite amount of money in exchange for it, and the best sale is that for most money. In effecting the sale he has before him a definite object, namely, to get as much money in exchange as he can. The buyer has before him another definite object—to get the commodity as cheaply as he can. Thus, in each case, a certain order of choice is presented, the highest amount of money in the case of the seller, and the largest amount of goods in the case of the buyer, being preferred. From this order of preference arises the conception of a mathematical quantity called *value.*

It is a general rule, applicable not only to economics, but to all the mathematical sciences, that the definition of an object

or of a magnitude of any kind does not include a description of how it shall be measured. As a general rule the quantity itself and the system of measuring it are to be defined separately. Now what is termed the theory of value includes not only these two definitions, but at least a third subject. We thus have,

First, the definition of value as a simple quality or object, without respect to how it shall be measured. That is, we must know *what value is.*

Secondly, we have to describe or define *how value shall be measured.*

Thirdly, we have to study all the *causes on which value depends.*

The last does not belong to the present stage of the subject, and the first can be better considered at a future stage. We have therefore only to deal with the second by considering how value is measured in practice.

17. *Value as a Mathematical Quantity.* In economics price is considered as the measure of value. The price of a commodity is the number of units of money which the commodity can be exchanged for in the public market. The monetary unit is a dollar in America, a pound in England, a franc in France, a mark in Germany, etc.

We are careful to say, not that price is value, but that price is the *measure* of value. It is the measure of value just as length is the measure of a line, weight the measure of iron in the market, and volume the measure of things which sell by the bushel. We have now to consider the method of measurement.

I. In mathematics **quantity** of any kind is measured by taking a certain standard portion of the quantity as a unit and determining to how many of these units the quantity measured is equivalent. For instance, the length of a board may be expressed by taking a standard unit called the foot, and stating how many feet will make a length equal to the board.

II. When we measure a quantity we leave out of consideration all the qualities of the thing measured except those which pertain to the special quality which is measured. For example, in estimating *length* the measuring unit may be made of iron, boxwood, brass, or any other material. The thing measured may be wood, iron, rope, or any other substance; may be of any color and have any weight. But all such qualities as color, weight, etc., are left out of consideration in the estimate of length. So with *weight*. Our unit of weight, which may be a pound or a kilogram, may be of any material whatever; and the thing weighed may be of any length, any color, or any substance. But in stating the weight we make abstraction of all qualities except weight.

So with value. In stating the value of a commodity we have no reference to its color, magnitude, or weight, but only to the degree in which it possesses the attribute of commanding money in the public market. Just as we have a certain measure called a foot which we take as the unit of length, or a certain weight called a pound as a unit of weight, so we have a piece of gold which we call a dollar, the value of which we take as the unit of value. Again, as we measure length by applying a foot-rule, and weight by balancing two things in the scales, so we measure any commodity in terms of the unit of value by ascertaining how many units of value it will exchange for in the public market.

Relativity of Value. It follows from this that, like all other expressions of quantity, values are not absolute, but relative to some unit of value. If we are asked for the value of a loaf of bread, we can answer only by saying that it is equal to a certain number of cents. The value of one cent is then the term of comparison or the unit of measure. If we express the value of a house in dollars, the dollar is the term of comparison or unit of value.

Absolute Value. It does not follow from this that there is no such thing as absolute value, but only that we have no way of stating what the absolute value of anything is. Here again

our conceptions will be assisted by an analogy with sensible objects. We have here a piece of rope. It has a certain length. I may inform you what that length is by telling you that it is 2 yards, 6 feet, or 180 centimetres. Then the yard, the foot, or the centimetre is the term of comparison. Yet when I think about the rope, I conceive its length as remaining the same no matter which term of comparison we use. So with value. The value of a barrel of flour to a certain person under given conditions is the same, though we may call it one pound, five dollars, twenty marks, or twenty-five francs.

Effect of Changing the Unit of Measure. This principle has an important application. The number which expresses *value*, that is, *the price*, depends upon the unit of comparison, and in fact varies inversely as that unit varies. For example: A barrel of flour is worth four times as many marks as dollars, because the mark is only worth one fourth as much as the dollar. Now if all the foot-measures of the country were liable to change, either by an act of Congress or by a natural shrinkage or expansion over which men had no control, it is evident that the expression for all lengths would vary inversely as the measures. If the yard-stick were reduced to one half, a piece of cloth, unchanged in absolute length, would measure twice as many yards. So, in the case of value, we are compelled to admit that our measuring unit, the dollar, is subject to changes like changes of length in a yard-stick. The prices of commodities will then change in the inverse ratio. But we are not therefore to look upon their absolute values as being altered by this cause, though their value relatively to the dollar is altered. The consideration of these changes belongs to a later part of the subject; what we have at present to do is to fix in the mind the measure of value as a mathematical quantity, namely:

The value of a commodity is expressed by the number of monetary units it will exchange for in the public market.

NOTES AND EXERCISES.

1. The business forms and evidences of credit belong rather to the subject of business and finance than to that of economics; but as a knowledge of them is essential to the study of the latter science, the following explanations may be of use to the student.

We call to mind that credit, as already explained, means the right on the part of the creditor to require a payment of money at some future time, and of course implies a corresponding obligation on the part of the debtor. The written or printed instruments by which such obligations are certified are classified in various ways, depending upon the class of persons to which the creditor belongs, and upon the nature of his obligation.

The legal obligation on the part of an individual or a firm to make a payment is certified by a *promissory note*. Such a note is commonly expressed in the following form:

New York, December 1, 1865.

Six months after date I promise to pay to John Smith or order the sum of $700, *with interest from date, for value received.*

William S. Bartlett.

The expression "for value received" is necessary because payment cannot be enforced at law unless the promise was made in consideration of some act performed by the other party.

The term "or order" indicates that the drawee or creditor (Smith) may transfer his right, by indorsement on the note, to any other person, this person to another, and so on indefinitely. The transfer is effected by each holder writing on the back of the note an order to pay some other holder and signing it, which order is called an indorsement.

When the debt is due from an incorporated company or a government, the evidence of obligation is called a bond. The principal difference between bonds and promissory notes consists in the persons who issue them, and in the fact that in a bond is commonly given a statement of the laws or other authority under which it is issued. Sometimes, as in the case of United States bonds, the principal of the debt is payable at a future definite time, with interest payable semi-annually. In the case of bonds issued by most European governments, the time of payment of the principal is so far from being definitely fixed that the value of the bonds depends mainly upon the rate of interest, and the obligation is that of paying a certain sum annually for an undefined period of time.

Next to government bonds, railway bonds have become the most common in recent times. When a railway is to be built, the stockholders generally borrow a considerable part of the money necessary for the work. The bonds in which the obligation to pay principal and interest of the money is certified are called railway bonds.

Mortgages. The conditional right to property pledged in payment of a debt, which has been described in § 7, is called a mortgage. Railway bonds are always secured by a mortgage upon the property held by the railway company. Then, in case the company fails to make good its obligations, the bond-holders have the right to take possession of all the property owned by the railway company, and to apply it in paying their bonds or otherwise securing their rights. The familiar case of a mortgage of real or personal property by an individual may also be mentioned, but need not be discussed.

2. Mr. H. D. MacLeod divides wealth into three classes, as follows:

I. "*Material or corporeal things.* There are material things, such as lands, houses, money, corn, timber, cattle and herds of all sorts, jewelry, minerals, and innumerable things of this nature which can be bought and sold, and whose value is measured in money.

II. "*Immaterial wealth.* A person may sell his labor or services in many capacities for money, such as a ploughman, an artisan, a carpenter, or as a physician, an advocate, an engineer, an actor, or a soldier; and when he receives a definite sum of money for such labor or service, its value is measured in money, as precisely as if it were a material chattel.

"We have already cited, in a previous chapter, the dialogue called the Eryxias, to show that labor of any sort which is paid for is wealth, for the very same reason that gold and silver are wealth.

III. "*Incorporeal wealth.* There are vast masses of property which exist only in the form of abstract rights, quite separate and severed from any material substances, which can all be bought and sold, and whose value can be measured in money, exactly like that of any material chattel."

Is the above classification satisfactory? In the second class can labor be properly considered as wealth? Must not something, if it be no more material or durable than musical sounds, be produced by the labor? If so, in what does the wealth inhere? Is labor, apart from a result, ever paid for?

In respect to the third class, can any abstract rights have market value unless they are rights to or in some object, now existing or hereafter to exist, material or immaterial? Consider in succession the case of government bonds, railway stocks and bonds, bank stocks, promissory notes, and tickets to a theatre. Can you, in all these cases, form distinct conceptions of the right, and of the object in which it inheres? If so, you are to consider the latter, whatever it may be, as the wealth, and the former as nothing more than the right to the wealth.

3. To what extent, if at all, do you think any of the following things should be considered wealth? Give your reasons in each case, but remember at the same time that since we are concerned only with definitions, and since definitions, in the last analysis, are arbitrary, we are to consider only the question whether it is convenient and conducive to clear thinking to consider the things as wealth.

I. The acquired skill of the artisan.
II. A strong and active population.
III. The moral qualities of the people.
IV. The sounds produced by a musician.
V. The Washington monument at Washington.
VI. A good business reputation.

4. What persons can be said to enjoy or use the Washington monument?

5. A farmer owns a farm valued at $10,000. A railway company of which the stock is divided into 50,000 shares has a mortgage of $6000 on the farm. If the company consists of 1000 shareholders, each holding 50 shares of the stock, how is the property in the farm divided amongst the various parties concerned?

6. The net earnings of a railway having 10,000 shares of stock are such as to justify a gross valuation of $2,000,000. It has out, however, 1500 mortgage bonds of $1000 each. What will be the value of the following properties in the railway and its bonds held by the following three persons?

A. A person holding 50 shares of the stock.
B. A person holding 60 shares of the stock and 5 of the bonds.
C. A person holding 10 shares of the stock and 20 of the bonds.

7. If the inhabitants of a city should borrow a sum of $5000 and expend it in improving their streets, in what respect would the amount of public and private property of the city and its inhabitants be changed after the improvement was made? Consider separately the cases when the money is borrowed from persons outside the city and when the citizens themselves loan the money.

8. A farmer borrows $1000 from his neighbor, and expends it in barns and other improvements on his farm. In what respect has the wealth owned by the farmer and his neighbor respectively been changed? Has the total value possessed by either been changed?

9. If all the members of a community should lose all their money, but still have an ample supply of all the necessaries and luxuries of life stored up in their warehouses, would they be completely impoverished by the loss of their money? In what way would you expect them to proceed in order to make use of their wealth?

10. If, in levying a tax, every holder of a promissory note secured by mortgage of farms is taxed upon the whole amount of the note, while the owners of the farms are taxed for the full value of the farms, is there any inequality or injustice in the tax?

11. When we say of a rich man "he has plenty of money," or "he owns a million of dollars," do we make a correct use of language? Do you conceive that there is any person in the country who now owns, or ever did

own, a million of dollars in either gold or silver? Define precisely what it is we mean when we speak of a rich man as owning money.

12. Can any person but the owner of a private collection of pictures enjoy the use of the pictures? Can he enjoy them equally with the owner?

13. When a hospitable man gives an expensive dinner-party to his friends, describe the compensation which he receives for the expenditure of his money.

14. From an economic point of view, what does the contributor to a charitable society receive in exchange for his gifts?

15. Do you consider that in either of the last two cases there are any sound reasons for making a distinction between the enjoyment received for the expenditure and the enjoyment received when one purchases goods in the market?

16. Do you consider that the country at large is richer or poorer when, in consequence of a scarcity in the wheat-crop, the price of wheat rises in a yet greater proportion, so that the crop is worth more than before?

17. Suppose Congress should call in all the silver and gold of the country and re-coin it, putting just half as much metal in the coin as before, so that twice as many dollars would be in circulation, but each dollar would only have half as much metal. Can you judge what effect this measure would have upon price? Do you conceive that values would be affected by it? If so, how, or in what sense?

18. When one buys a ticket to the theatre, what is to be regarded as the wealth he is paying for?

19. During the few years after the gold discoveries in California and Australia, prices generally were higher the world over. Did this indicate a change in real values, and, if so, in the value of what?

20. When we speak of the value of a good name, do we use the word "value" in an economic sense? Supposing it to be interpreted in an economic sense, how would you measure it?

21. Are the following cases of consumption productive or unproductive?

I. The consumption of wheat to produce flour.
II. The consumption of flour to make bread.
III. The consumption of bread to support life.
IV. The burning of coal in an engine.
V. The burning of coal to warm a house.
VI. The burning of coal to warm a factory.

22. What would the economist mean by the consumption of horses and cattle? In what cases is the consumption productive, and in what cases unproductive?

23. What different kinds of wealth have to be consumed in the production of wheat? In that of wealth?

DIVISION B.—THE MECHANISM OF PRODUCTION.

CHAPTER III.

THE REQUISITES OF PRODUCTION.

18. To see what we mean by the requisites of production, let us return to our starting-point. We see in man a being moved to action by innumerable wants. The satisfaction of these wants constitutes his well-being, and the exertions which he makes to attain this well-being are called his labor. The process of employing his labor so as to produce the greatest well-being requires certain agencies which are included under the term wealth. The operation of bringing wealth into existence and making it available for well-being is called production. Now if men could at any moment produce all the wealth they wanted without regard to conditions, the state of the world would be entirely different from what it is. As a matter of fact, the successful production of wealth requires the employment of objects and agencies of various kinds. Any object or agency which conduces to production is called a *requisite of production*. To illustrate the requisites of production, let us see what had to be done in order that a coat should be made for a man to wear.

In the first place, sheep had to be reared, pastured, and sheared in order that the wool necessary for the coat should be obtained. The breeding of the sheep required a considerable expanse of land on some western prairie or in the interior of Australia. It is obvious that without land there could be no grass and therefore no wool. Now land is in its original state a gift of nature which men cannot make at all. In the further pro-

cess of manufacture a factory had to be erected and machinery of brass and iron employed. A particular kind of earth was necessary to make the bricks out of which the factory was built, and the iron had to be extracted from iron ore. Both these materials had to be taken out of the earth, and their ownership is associated with that of land. If the machinery was run by water-power, a river was necessary; if by steam-power, coal had to be dug from the earth to make the fires which produced the steam.

If we take up any other article of wealth and inquire how it was made, we shall find that we start in the same way with natural products, such as soil, metallic ores, beds of coal, rivers and oceans. These products are at the basis of production, and the most important of them are found under or in the ground. We therefore have the two following propositions:

I. *Natural products are the first requisites of production.*

II. *The principal natural products which are material in form are found under or are derived from the soil.*

Another requisite to the coat is *capital*, of which the material and machinery may be considered typical. They are appliances which have no use in themselves, but without which the coat cannot be made. Capital is therefore another requisite of production.

Yet another requisite is *labor*. Everybody sees that a coat cannot be made unless the drovers, shearers, railway employés, operators, dealers, and merchants all perform certain functions; and such performance we call labor.

But there is yet another condition which may be to a certain extent included under labor and skill, but which nevertheless has a basis distinct from either. This something is *organization*. It probably took many hundred men to make the coat. Only one man out of all these knew who the coat was for, and he did not know it until the owner went to buy it or to order it. All these hundred men must work in unison, and must acquire certain habits and customs in order to do their work to the best advantage. The men who direct them, especially those

who bought and sold the goods, required long experience to know just whither the wool and the cloth should be taken, and to whom they should be sold, in order that the wearer might get his coat in the most economical way. These habits, this knowledge, and this business skill are things of slow growth from generation to generation, and being necessary to the coat should be considered requisites of production.

19. *Of Knowledge as a Requisite of Production.* Proceeding with our inquiry, we see that another requisite equally necessary, though often forgotten, is *knowledge*. In knowledge we may include skill of any kind.

If men do not know how to cultivate the ground, to shear sheep, to spin and weave economically, and to manage all the complicated machinery necessary in applying the powers of nature, there could be no coat made, or at least only a very inferior and costly article. Knowledge is therefore an indispensable requisite, and one for which large sums of money may be paid. The owners of a silver-mine will readily give thousands of dollars to an expert geologist merely to be informed of the probable amount and situation of the ore which may be contained within their property. What they pay for in this case is nothing but knowledge, since the geologist they employ is not expected to do anything but give them information. Knowledge is a product of labor, since, omitting exceptional cases, no one can acquire it without that exertion of the faculties called labor. The acquisition of knowledge may therefore be regarded as an act of production. But there are two essential points in which the acquisition of knowledge differs from other kinds of production.

I. *Diffusibility of Knowledge.* In general when wealth is produced it can be transferred only to a limited number of persons. What one person gets another cannot have. But valuable knowledge may, by speaking, writing, or printing, be rapidly diffused over the whole world. The producer of knowledge may indeed keep it to himself and seek to derive the whole

benefit of it. But as a general rule little benefit will be acquired unless he transmits the knowledge to others. Among men professionally engaged in the increase of knowledge it is generally a matter of honor to make known to the world everything that they discover.

II. *Tentative Character of the Labor of acquiring Knowledge.* The second point in which the acquisition of knowledge differs from other kinds of production is that the acquirer necessarily works in the dark to a greater or less extent. As a general rule the person who is engaged in production knows exactly what he is going to produce, and can estimate in advance with more or less accuracy the amount of labor which he must expend to attain a given end. But in the pursuit of knowledge the very fact that the investigator is intent on discovering something not before known implies a greater or less degree of ignorance as to what he is going to learn. In consequence there will sometimes, though not always, be doubt whether he is going to learn anything of value. Searching after knowledge is generally like seeking to discover whether a country does or does not abound in mineral wealth. Labor must be spent in investigation, and until the work is done it must be doubtful whether any discovery of value will be made.

20. *Classification of Knowledge.* To understand the relations of the different classes of knowledge to the prosperity of mankind we must examine more in detail the different kinds of knowledge. We frequently hear the term "useful knowledge" employed. The use of this term implies the antithetical idea of useless knowledge. From a purely economic point of view this distinction has a certain foundation. Some kinds of knowledge have been applied so as to increase the production of wealth, while other kinds have not. The former may be called useful, and the latter, so far as the production of wealth is concerned, may be called useless. It is therefore very common, especially among men of narrow views, to ask what is the use of scientific investigation or of any kind of learning which does

not evidently conduce to the production of wealth. The reply to this is that it is impossible to decide whether a result of investigation is or is not useless until it is fully mastered and understood. Even then years or generations may elapse before we can ascertain how it is to be applied in promoting the good of mankind. As a matter of fact, it is rarely found that investigations made with an immediate utilitarian object in view lead to any result which is of extended utility. The general experience of mankind shows that, in order to attain results of permanent value and capable of the widest applications, the ruling motive must be the mere desire of learning and not the acquisition of useful results. The explanation of this seeming paradox is found in the tentative character of the search after knowledge already described. We cannot know how a result is going to be useful until we have fully mastered it.

A body of knowledge collected and arranged with respect to its intrinsic completeness, and without respect to its economical applications, is called a **science.** The relation which we have described between science and the production of wealth may be illustrated by a glance at the history of electricity. When, two centuries ago, physical philosophers began to investigate the attractions and repulsions which were noticed between bodies after being rubbed together, it was impossible to foresee how these facts could be turned to any useful purpose. A hundred years later the experiments of Franklin were looked upon with comparative indifference by his neighbors. The same thing remained true when Galvani and Volta began to experiment on the contraction of the muscles of a frog's leg produced when pieces of metal were brought into contact with it. Mathematicians devoted great labor to investigating the laws of the electric currents before any utilitarian application of the principles could be foreseen. Thus, out of pure curiosity and a desire for thoroughness of knowledge, a science was constructed without any reference to utility.

But as the science became perfected it was found susceptible of uses which its founders could never have dreamed of. First

came the electric telegraph, which has been gradually perfected by the laws discovered by mathematicians. Then came the dynamo machine, by which a curious transformation of physical forces was perfected. Instead of getting light directly from combustion we may now burn the coal, turn the heat thus generated into energy by an engine, turn this energy into electricity by a dynamo machine, and finally turn the electricity into heat of great intensity, and thus generate an amount of light exceeding many times over what could have been obtained from the original combustion of the coal. What we are to remember is that all the benefits now or hereafter to be obtained from electricity would never have been known had not several generations of philosophers, out of pure curiosity, devoted themselves to the investigation of the laws of that agent. The same thing is to a greater or less extent true of all the modern applications of scientific principles to production. The knowledge of these principles originates in investigation undertaken from the desire of acquiring thorough and complete knowledge, and not with the object of reaching any evidently useful result.

21. The knowledge just described is that of the laws of nature. But after the laws of nature are discovered another class of investigation comes in. It is necessary to discover by measurement and observation the constant quantities which enter into the expressions of these laws. For example, it is a law of nature that heavy bodies are attracted towards the centre of the earth. The mere knowledge of this law does not tell us how strong the attraction is. But when we learn by experiment that a heavy body in a vacuum falls sixteen feet in one second, we have an exact quantity which it is necessary to know in order to apply our knowledge. The attractive forces of electricity under different circumstances, the boiling points of liquids, the pressure of gas and vapors at various temperatures and densities, the electric resistances of various materials, and the distances of the heavenly bodies, are examples of an

indefinite number of physical constants which must be known in order that natural laws may be applied so as to secure the greatest results with the least expenditure of labor.

Statistical and geographical knowledge, maps of the country, and tables of fertility of the soil may be considered as belonging to the same class with the knowledge of the constants of nature. What distinguishes this class of knowledge is that it is not pursued in the dark as one has to pursue the discovery of new laws. In determining a chemical constant, making a map of a country, or analyzing a soil, one may know beforehand exactly what he has to do and what the general character of his result will be.

It is an essential characteristic of all the knowledge just described that when once found it may be transmitted to mankind in general. But there is something closely allied to knowledge which is not thus transferable. It may perhaps be called individual skill and power of judgment, rather than knowledge. The skill of the mechanic, the administrative abilities of the president of a railroad, and the business knowledge and skill of a merchant belong to this class. All are essential to the most efficient production. In nearly every branch of business a person possessed of the proper talents gradually acquires a sort of knowledge by which he instinctively avoids mistakes, forms correct judgments of what should be done under various circumstances, and thus acquires a wealth-producing power which inexperienced persons would not possess. If all the producers of the country should lose the special skill and faculties which they have acquired by experience, a severe blow would be struck at the production of wealth.

CHAPTER IV.

OF NATURAL AGENTS AS REQUISITES OF PRODUCTION.

22. We have seen that raw material and natural productions are the first and most necessary requisites of production. Were these requisites obtainable by all the world in unlimited quantities, the state of society would be entirely different from what it is. But if we look around us we shall see that while the supply of some agents is substantially unlimited, that of others is either limited in quantity or accessibility. The supply of air is unlimited. The limitations upon the supply of water for household purposes are so few as to be hardly worth taking into account. But the case is very different with land and metalliferous ores. The farms are necessarily limited to the forty or fifty million of square miles comprising the surface of the continents and islands of the earth; and if we take out those portions which are either uninhabited or useless, the actual available supply of land will be much smaller. Ores and minerals are yet more limited in quantity. The streams which can furnish water-power are generally few in any one country. The result of this is that it is physically impossible for every one to command all of these requisites of production which he needs or may think he needs.

In a primitive state of society we might imagine every man to be allowed to avail himself of his share of the raw material supplied by nature without money and without price. There are enthusiasts who advocate the trial of such a system at the present time. But a slight examination will show us that it would be contrary to the instincts of human nature which rule us in such cases, and would be impracticable of execution as things now exist. We have first to show by what instincts of human nature the right of property in an object supplied by nature is recognized.

23. *Of Appropriation.* If we look back into history to learn how land, minerals, and other agents supplied by nature could be owned by individuals, we shall find it to be through the right of appropriation. There is a natural feeling in the breast of each man that if he discovers something which was not previously known, or at least was not valued or used by any one else, he has the right to claim it as his property, so far at least as he is able to take possession of it. This right, however, speedily becomes limited and regulated by governments, which claim the right to make laws on the subject. The general rule is that if an island or any new land is discovered by a citizen of any country, the government of that country claims the right to ownership. Thus a large part of the American continent was at one time considered the property of one or another of the governments of Europe which had sent out expeditions for its discovery. Thus also England at various times became the owner of numerous islands which were discovered by her navigators in every part of the globe. In new countries the land is considered the property of the government, which sells it to individuals. Thus in most of the British colonies there are large tracts of land, known as crown lands, not yet occupied by settlers, but which may be sold to them as they require it. So, also, the United States Government owns large tracts known as "public lands" in the western Territories, and derives an income of several million dollars per annum from their sale. When the land thus becomes the property of the individual, his right to dispose of it is, with some exceptions, as absolute as his right to dispose of anything he has himself made.

The government claims not only the land, but all the minerals which may be concealed beneath it; an individual becomes the owner of such wealth by first discovering that it exists. He goes out "prospecting" on some portion of the public lands where his geological knowledge may lead him to infer the existence of minerals, and if he thinks he has discovered ores of value he may purchase from the government

the right to dig a mine and appropriate all the ores he finds to his own use. Nearly the same rule holds in the case of diamonds. When, for example, the great diamond-fields were discovered in South Africa, the exclusive right to gather them was granted to certain companies. Thus we perceive the operation of the fundamental principle already alluded to, that, by the instincts of our nature, the act of discovering and taking possession of land gives the right of ownership, subject to such limitations as the supreme power may enact. Now this system has both its abuses and its reasons. Let us consider first the reasons for it.

24. ***Necessity of the Right of Property in Natural Agents.*** If the condition of land and minerals were such that each individual could avail himself of them without labor, the case would be much stronger in favor of those who would restrict or deny the right of appropriation. But a little consideration will show that, as a matter of fact, it is impossible to make any arrangements for the possession of natural agents without devoting labor to them. Take first the case of land. Before a crop can be raised from it, trees must be cut down, fences built, barns and other structures erected, and fertilizers purchased and applied to the fields. It is not worth while to make these improvements unless the person who makes them is to have the benefit of them. But it is impossible to separate them from the land. He cannot carry away the house, the stables, the fences, or the fertilizers. Thus he cannot be deprived of his right in the land without interfering with his exclusive right to the product of his own labor.

In the case of anything concealed beneath the soil, discovery is necessary before it can be utilized. Now the process of discovery is one which requires skill and may involve great labor and hardship. No one is going to subject himself to this hardship unless he is to reap the fruit of his discovery. Practically, therefore, the right of appropriation in natural agents cannot be denied without denying the right of property in the

product of one's own labor. Moreover, the right to find a mine or to preëmpt a farm is not confined to any particular persons or class of persons, but is equally enjoyed by every one who chooses to avail himself of his opportunities. Thus natural agents become private property by a logical necessity which mankind have in all ages been obliged to accept.

Objections stated. It must be recognized that as the population of a region increases, notwithstanding the necessity just shown, the supply of natural agents becomes scarce. The general rule is that when land is first occupied, or any natural product discovered, its value is very slight. No limitation is placed upon the quantity which any one person may own, and thus there is nothing in the way of an individual possessing himself of entire counties and perhaps owning the whole of a valuable mine. Now if population did not increase there would be no objection to this. But it often happens that the land so little valued by one generation is of the greatest importance to subsequent generations who come into the world finding that their ancestors have permitted this valuable gift of nature to be inherited by a few individuals. Thus in England more than half the land is nominally owned by a comparatively small number of people. In every part of the world valuable mines of coal and of iron, the products of which are most necessary to the community at large, are held by a few individuals or companies, who can command a price for what was originally a gift of nature. Hence the view that this system is wrong, and that the right of every human being to his share of the gifts of nature should be recognized, is not an unreasonable one.

But when we examine more closely we shall see that this evil is to a great extent compensated in various ways. We can at present only indicate the compensations in a general way, because the full treatment of the subject requires a knowledge of economical theories yet to be acquired. In the first place, we readily see that if every one were allowed at pleasure to avail himself of all the raw materials of nature, they would be speedily exhausted, so that none might be left for posterity.

Hence it would be necessary to prescribe how much coal or iron or other minerals each individual should have. The practical difficulties in doing this would be insurmountable. But under our actual system the care which every prudent person takes of his own property is extended by the owners of natural agents to their property, and thus the contents of the great storehouses of nature are protected from waste.

Again, self-interest prompts the owners to allow the public the benefit of their possessions on nearly as good terms as the public could command if the property were public. It is true, theoretically at least, that if the right of the land-owner is completely unrestricted he could fence in his land and forbid its being applied to any useful purpose. Practically, however, this cannot be done. Should it be attempted, we may be sure that society would find a way of remedying the matter. An example of how readily law is provided to meet a difficult case is afforded by the decisions affecting the rights and obligations of irrigating companies in the arid regions west of the Rocky Mountains, and especially on the Pacific coast. Here the very existence of the farming population depends upon a supply of water from mountain-streams which are in the possession of companies who have collected the water in reservoirs and constructed the conduits and other appliances necessary to supply the farms. Suits by the farmers against the companies are not uncommon, and the general result has been a body of law which insures to every farmer his supply of water on the same terms that his neighbors get it, and as completely as if the works of the irrigating companies were public property. In England the rights of the landlord are far more restricted than in America. Neither law nor public opinion allows him to charge as much as he pleases for his land, as he may do with us.

When we are in doubt between opposing reasons we may often appeal with advantage to the instincts of human nature. The fact that men of all races are ready to fight for their land may decide the question for us.

CHAPTER V.

OF CAPITAL.

25. The use and importance of capital arise from the fact that men cannot, by the direct application of their labor to the materials furnished by nature, produce those articles which they desire. For example, they cannot with their own hands make cotton into a shirt. They must have a loom to effect the transformation. The farmer cannot raise wheat without the aid of spades, ploughs, or machinery to till the ground; and after his wheat is raised he needs a mill to grind it into flour. In these cases the loom, the spade, the plough, and the mill are not desired for their own sake, but only because they are useful in producing objects of desire. If we continue this analysis we shall see that the wealth of the country may be divided into two portions:

1. Wealth which is desired and possessed by its owner for its own sake, because it contributes directly to the gratification of the owner. Examples of such wealth are the houses in which we live, the furniture, books, and pictures which adorn our walls, the clothes we wear, the food we eat, and the coal which is to keep us warm. This kind of wealth we shall call **sustenance.**

2. Wealth which is desired, not for its own sake, but in order that by it we may obtain such wealth as we do desire for its own sake. Wealth desired, not for its own sake, but for the sake of the sustenance which it will enable us to produce is called **capital.**

The distinction between capital and sustenance, though logically a sharp one, cannot be sharply drawn in practice. We cannot always decide without question whether any given kind of wealth is or is not capital. We shall also have to recognize

the principle that wealth may possess the quality of capital in different degrees, and may be capital or not according to its relations to its owner.

There is another definition of capital which at first sight may seem to have no relation to the one just given, but which, when we examine it more closely, we shall see to be equivalent as a consequence of human nature. It is as follows: *Capital is that wealth from the enjoyment of which the owners are abstaining in order to gain a future profit.*

To show how these two definitions amount to the same thing, let us take first the case of the savage who possesses no power of abstaining from present enjoyment for the sake of future good. He will not try to make any sort of machinery, because before he can get any good from the machinery he will have to wait a long time, and he is not willing to spend his labor for any benefit to accrue only in the distant future. He would rather chase a buffalo and thus get a skin which he can put on to-morrow than undertake any labor which will not yield him good clothes until next year. If he has corn, he will pound it between two stones, because then he can enjoy the product of his labor the same day when he sits down to his evening meal. But he will not sow it to raise a crop for the next year.

Coming next to civilized men, we find that large numbers of them, even among the well-to-do classes, rarely attempt to acquire wealth except for its own sake. They expend all their income on house-rent, furniture, coal, food, clothing, and other things desired for their own sake. Hence they never save. But if a person wants to save up money and gain interest on it, he must get something which he does not want for its own sake, but for the sake of something else to be obtained in the future. We may therefore say that wealth from which the owner is abstaining for a future profit is identical with the wealth which is desired, not for its own sake, but in order by its means to obtain more wealth.

26. *Use of the Term Sustenance.* We have spoken of wealth which is desired by the owner for its own sake, and is called sustenance. The most important wealth of this kind is the food and clothing which every man must have in order to live, and the house which shelters him from the weather. In the case of the laborer who saves nothing, this is the only kind of wealth which he works for or seeks to possess.

It might at first sight appear proper to confine this term to the food, clothing, and shelter absolutely necessary to sustain the life, health, and physical vigor of the laborer. But it is well known that we cannot draw any sharp line between the necessaries and luxuries of life; nor can we draw any such line between those who are laborers and those who are not. We must therefore include in the term sustenance not only what sustains life, but everything which a person requires or can command for the purpose of unproductive consumption by himself and his family. It includes pictures, furniture and books, and indeed everything which does not produce other wealth in the act of being consumed.

27. *Classification and Examples of Capital.* Differences of opinion sometimes arise as to whether special kinds of wealth should or should not be considered capital. To reconcile these differences, we must admit that capital is in part a relative term, depending not merely upon the wealth itself, but on its relation to its owner. If it is something which the owner is not keeping for its own sake, but from the enjoyment of which he is abstaining, then it is capital so far as he is concerned, though it may not be capital when considered in relation to the person who is enjoying it. A difficult question of this sort arises in connection with dwelling-houses. When a person lives in his own house, the house is not capital. He is not abstaining from the enjoyment which the house might afford, and he is keeping the house for its own sake; hence it is not capital. But if he rents the house to some one else, then he is abstaining from the enjoyment of it; and he is not using it for

its own sake, but for the annual rent which he is receiving, or, more exactly, for the sake of the things which he may buy with the rent. Hence the house is capital in its relation to him. But it is not capital in relation to the community at large, for it is clear that houses are built for their own sake, and not to help future production. No more cloth is made and no more wheat brought to market after a house is built than before.

This leads us to say that the quality of capital considered as a relative term may be algebraically *negative* as well as *positive*. Relative to the tenant who lives in the house, the house is negative capital, because he is enjoying more wealth than he owns. The idea of capital as a mathematical quantity may be reached by the following course of thought:

Let us compare the wealth owned with the sustenance enjoyed by any person. If we subtract from the total wealth which he owns all that wealth which he employs as sustenance, or is making use of for his own enjoyment, the remainder will, by definition, be capital, because it is that portion of his wealth from the enjoyment of which he is abstaining.

But it may happen that the individual is enjoying more sustenance than he owns. In this case the definition will require us to subtract a greater quantity from a less, the result of which will be algebraically negative. This is the case with the improvident man. He has perhaps spent every cent he ever earned on objects of desire, and thus has not a dollar saved in the world; yet he may be living in a house which cost ten thousand dollars. Then he not only never saved anything, but he is enjoying what somebody else, namely, the owner of the house, has saved. Thus he is an *algebraically negative* capitalist.

The question may arise whether by limiting capital to things not wanted for their own sake we do not find that after all scarcely anything will be left except capital. For example, the barrel of flour in my pantry, it may be said, is not wanted for its own sake, but for the sake of the bread which will be made from it. One may go even farther, and inquire whether the coal in my cellar is not wanted for the sake of the heat

it is to furnish, and is not therefore capital. The reply to this is that we must give a special interpretation to the first definition of capital. We regard wealth as wanted for its own sake whenever it has reached the hands of the owner who is keeping it for his own exclusive use and is not abstaining from it for the sake of the profit to be gained thereby. Hence when the barrel of flour reaches the family who are to use it it ceases to be capital, though it is capital in the store of the grocer, because he keeps it to get something else with. And, in general, all the wealth of the country which is going through the processes of manufacture, sale, and transportation may be considered capital.

28. *Fixed and Circulating Capital.* Economists divide capital into fixed and circulating. Fixed capital comprises machinery and public and private works which are employed as agencies in production. Ploughs, fences, and working animals on a farm; factories and the machinery which they contain; railways with all their rolling-stock; ships and storehouses, are examples of fixed capital.

Circulating capital consists of the money which is circulated from hand to hand in the channels of trade, the material undergoing the process of manufacture, transportation and sale, and the stores of food and clothing which have not reached their consumers. Following through the process of production as we have already done, we may say that the wheat in the granary, the sheep on the prairie, their wool after it is shorn, the cotton in the factory, the cloth in the hands of the dealer, and the clothes in the clothing-store are all circulating capital.

One difference between the two capitals is that the one is a direct aid to production, while the other is not. They therefore possess the quality of capital in different degrees. A loom is a direct aid to production; without it we could not make cloth. The plough with its team of horses is a direct aid; without it the farmer would have to use a spade, which would be far less advantageous. The warehouse is such an aid because,

although it does not help the production, it preserves the goods from being spoiled by the rain or carried off by thieves. Ships and locomotives are direct aids in transportation. On the other hand, the wool and the cloth are not mere aids to production, but rather the material on which the work of production is performed. They are requisites of production, but not aids to it.

We may also consider circulating capital as that a definite quantity of which is consumed in the production of a definite quantity of any commodity. Thus, to make a coat a definite quantity of cloth is required. To make one yard of cloth of a certain kind a definite amount of wool is required. Thus we can trace the quantity of the substance through from the beginning to the end of a series of productive acts. On the other hand, the needle with which the tailor sews the cloth may be lost before one coat is finished, or it may make a hundred coats without being worn out. We cannot therefore say just how many needles are consumed in making a given number of coats.

A very important part of circulating capital is the store of food, clothing, and other necessaries of life which is laid up in the country for the consumption of the population generally. In fact, from the point of view of some economists, food is to be regarded as the primitive form of all capital. For, before the primitive farmer or mechanic could have made a plough, he must have collected the food to eat while he was making the utensil. During the process of manufacture the food disappeared and the plough appeared. We shall hereafter see that this idea materially assists us in understanding the subject by connecting labor with capital. From this point of view a pair of boots is simply a product of the following requisites:

I. A certain quantity of leather, pegs, tacks, thread, wax, and other materials which went into the boot.

II. A certain amount of wear and tear of tools, rent of workshop, etc.

III. The food which the shoemaker ate, the clothes which

he wore out, and the house-rent which he paid while he was making the boots.

Since the pair of boots is the product of the consumption of this leather, furniture, workshop, house, food, and clothing, we may establish a certain equivalent between them which will assist us in further researches. The labor of the shoemaker was merely the agency which combined the three elements just enumerated into a pair of boots.

20. *The Function of Capital.* The great purpose of capital, as indicated in its definition, is of fundamental importance and should be well understood. We may state it in the terms, *Capital is employed as a labor-saving agent.*

To show how this is, let us take the case of the primitive farmer who tills the ground with a spade. As his condition improves, or as the country around him improves, he is enabled to substitute a plough and a pair of horses for the spade. To find whether this change is advantageous we have to compare the debit and credit side of the account. The plough and horses cost money, or, which amounts to the same thing, they required that the farmer should spend a certain amount of labor in procuring them and taking care of them. This is the debit side of the account. The increased land which they enabled him to cultivate, or the diminished labor with which they enabled him to cultivate his field, forms the credit side of the account. Unless the gain compensates for the labor spent in procuring the team, the latter has not paid for itself. In common language, it has been a bad investment.

Again, in making cloth: a barbarian can make a robe out of coarse material with great labor. By spending his labor in making a loom he will be enabled thereafter to make a better robe with far less labor. If he, or the community to which he belongs, is able to construct a factory and use steam or water power, a still greater saving of labor is effected. But in all cases the labor saved must more than compensate for the labor of producing the capital. Unless the person who produces

the capital expects to save labor, he would have had no object in producing it.

If we look around us we will see that nature may be considered as offering to those who will save, a perpetual interest upon their savings, if they employ them judiciously. An example is seen in the case of great public works. By the expenditure of a certain sum of money in digging the Suez Canal there is a perpetual saving not only for ourselves, but for future generations, in the number of ships, the quantity of sails and coal, and the labor of sailors necessary to transport goods from Europe to the East. By digging the Panama Canal there will be a similar perpetual saving of the voyage around Cape Horn. In each case the annual interest or profits on the canal will be the excess of the saving above the cost of working the canal and keeping it in its original good condition. By tunnelling mountains a perpetual saving is made for the future in the cost of transporting goods across them. Every railway which is built diminishes the cost of transporting goods overland. Thus until men have dug every useful canal, built every necessary railway, and tunnelled every mountain which obstructs the transportation of goods from place to place, nature will offer to those who choose to save their earnings a perpetual interest upon their savings, provided they will employ them in such works.

30. *Capital the Result of Abstinence.* It is clear that, in order to effect the gain thus described, the labor of producing the capital must have been withdrawn from the production of objects of immediate enjoyment. The primitive farmer who spent all his time in spading the ground in order to obtain a bare support for his family would never save money to buy a plough and team. He must do without a certain amount of the products of his labor as a condition precedent of being able to make the improvement. He may indeed buy his capital on credit, but, apart from the difficulty that his credit may not be good, it is then necessary that some one

else shall have abstained from the enjoyment of the fruits of *his* labor, in order to produce the plough and horses. This last illustrates the case with the vast majority of men. They are in the enjoyment of a large amount of the previous labor of other men, for which they pay a profit. Thus the profit of capital, commonly called interest, is what is paid to the capitalist, not for his labor, but for his abstinence from the enjoyment of the products of his labor, and his willingness to allow others to use his capital.

It may be asked how circulating capital can be considered either as saving labor or as resulting from abstinence, and whether if it does not save labor it does not fail to perform the essential function of capital. It is true that it does not directly operate as a labor-saving agent, but only as an absolute necessity to the progress of the work. But it is a requisite of production which is not intended for the owner's own use, and in order to procure this requisite he must expend money which he otherwise could have spent in his own enjoyment. Since he practises abstinence, and since that practice is itself something which can command money in the public market, it follows that he must be compensated for it, and thus a profit must be paid on this investment just as it is paid on the investment of machinery in production.

31. *Divided Ownership of Capital.* The forms of capital which we have just considered include only material agencies actually employed in production. But in the language of business the word is used in what is apparently a much wider sense. Whenever men come to bankers to purchase bonds, or other credit property yielding interest, they are said to bring "capital" in order to invest it. In this case the idea is that the entity called capital is something which the owner puts into or invests in the bonds or other things which he purchases. But if we look closely into the matter we shall see that in this case the word is used to designate the money which one has saved up to pay for the bonds or stocks which he purchases.

But these bonds and stocks are also called capital. They may be government bonds, railway bonds, mortgages on real estate, or any immaterial rights by which one gains interest. We thus have two distinct meanings of the word in addition to that which we have already assigned it. This threefold use leads to a confusion which must be cleared up. In the original and proper sense of the word capital consists of nothing but wealth, namely, that wealth which is devoted to further production, or employed in such a way as to yield a profit to its owner. But we have shown that wealth may also be considered in relation to its owner, and when thus considered we have called it property. We have also shown how a given piece of wealth may have various owners who have separate kinds of rights in it, and who may transfer these rights of ownership to other persons.

Now the only difference between material capital actually employed in production and the bonds, stocks, notes, and other securities which people invest in is that the one is wealth, while the other is right of property in wealth. For the most part, the wealth to which this right pertains is material capital of some kind. Some illustrations will make this clear.

Let us first notice the relation of railway bonds to the railway itself. Such a bond is not a part of the railway, but it is a right to a certain definite income from the earnings of the railway. In the same way railway stock is a right of property in the railway itself and its net earnings after its debts due the bond-holders are paid. In these cases the wealth or real capital is the railway itself, while the stocks and bonds are merely the evidences of certain rights in the earnings of the railway.

Shares of stock in a company which loans money at interest consist in a right to receive a share of the income from the profits made upon forms of material capital, whether railways, ships, or factories, which the company loaned their money to build. It is therefore property in capital, but not the capital itself.

Since the money which one has saved up to invest is prop-

erly considered a part of his wealth, we may call it capital, because he is going to buy capital with it, although it is not a direct aid to production. No confusion need arise from this extension of meaning. We now see that the word capital is used in three senses, closely associated, yet not equivalent:

I. In the economic sense, as wealth employed for further production. This may be called absolute capital.

II. To express the rights of ownership in absolute capital, which rights are secured by certain written and printed instruments called bonds, certificates, etc.

III. To indicate the money which one has saved up and which he brings into market to purchase stocks, bonds, or other property in capital.

QUESTIONS.

1. Is it your opinion that the knowledge and skill in production which a man may acquire by long practice and study should be regarded as a part of his capital? Compare the cases of two men, one of whom has saved his wages to be invested in bonds, while the other has employed his in educating himself so as to command higher wages. What would be the points of similarity and difference in the two cases? Point out the economic importance of exchangeability in such cases.

2. A farmer who has annually expended $100 in the wages of men to thresh his wheat-crop concludes to invest $500 in a threshing-machine. The machine lasts him ten years, and at the end of that time can be sold for only $100. Its care and management have cost him $50 a year. Was it or was it not profitable? Would it have been profitable had he borrowed the purchase-money at 15 per cent per annum interest? At 20 per cent per annum?

3. Our newer cities frequently borrow money for the purpose of improvements. By what criterion would you judge whether they were to be regarded as negative capitalists?

4. Are the street-cars and public carriages which run in our cities a part of the capital of the country? If not, in respect to whom are they algebraically positive, and in respect to whom algebraically negative, capital?

5. In what case are the books in a private library to be regarded as capital?

6. Taking the view of the transformation of capital shown at the end of § 28, what has a railway manager to show for the sustenance he consumes?

7. Give some examples additional to those in § 29 of permanent improvements yielding a profit.

CHAPTER VI.

OF LABOR.

In the sense of the definition of labor given in § 2 it will be seen that nearly all men are laborers, because they are nearly all engaged in doing something for a living. The exceptions would be capitalists who live entirely from the interest upon their investments, and owners of real estate who live entirely upon their rents. But the capitalist or owner generally has a large surplus income which he has to manage, and in this case the work of managing it might legitimately be considered labor. It is, however, little more than a question of taste whether to call it so or not. Leaving out of consideration this and other exceptional cases, we may see that every able adult man is doing something to make a living, and so may be called a laborer.

32. *The Economic Laboring Unit.* Only a minority of the population which inhabits a country is actually engaged in economic production. The general rule is that the laborer has a wife and family to support. The former is lending him material help by cooking his food and mending his clothes; but there is no need of our complicating the matter by considering her a separate agent in production. The subject will be most easily treated by considering the laborer and his family as a unit in the social organism. The producing power of this unit is in our own country the work of the laborer himself. Its consumption is not only his individual consumption, but that of his whole family. Hence when, as in the last chapter, we consider the food and clothing consumed by the shoemaker as elements which go into the making up of a pair of boots, we ought to add the food and clothing consumed by his family.

In most European countries the wife and even the children of the laborer are obliged to take part in the work of production. In this case we cannot so well consider the family as a unit, and in fact it would be rather difficult to define the unit with precision. Perhaps the best course would be to consider the number of men who could do the work of the whole family as representing the number of laboring units included in the family. We should then have to divide the consuming power of the family into that number of parts in order to get the relation of the productive and consuming powers.

33. *Distinction of Laborer and Capitalist.* The typical laborer is a man who saves nothing from his income to assist him in future production, and who is therefore dependent upon some one else for the capital to render his labor effective. This definition applies not merely to the day-laborer, but to many in the higher walks of life; to any one, in fact, who does not save money for investment, or own property or capital engaged in production. Such a person may be a physician, a lawyer, a clergyman, or a general. The philanthropic tendencies of society, which we shall hereafter have to consider, lead men to look upon those who live by manual labor as forming a class distinct from those who practise the professions or perform only mental labor. In economics this distinction is of secondary importance. Yet we should recognize it wherever any essential question depends upon it.

It will be seen that the above definition of laborer would not include a shoemaker who owned his own tools and leather. He would be at the same time laborer and capitalist. Although the laborer and capitalist are so often identical, there is an advantage in considering them as economically distinct. We must therefore separate the functions of laborers from those of capitalists, even when they are united in the same person.

34. *The Wages of Labor.* If we define wages as meaning in the widest sense the gainings of the laborer, then we should consider all classes of laborers as receiving wages. The wages of the farmer and mechanic would be the value of his product sold after paying all the costs of raw material, rent, etc. It would therefore depend entirely upon his own ability and exertions whether his wages were great or little. But, in the ordinary acceptation of the term, wages include only the moneys paid the laborer by an employer. This pay may be either according to the time employed, so much per day, month, or year, or it may be by the piece, as in the case of the physician and of many mechanical trades. In the first case the rate of wages would be defined as the amount paid by the employer to the laborer per unit of time in exchange for the laborer's services.

Although the term *wages* is in ordinary language thus restricted, yet the wider sense, which includes all earnings by the use of one's faculties, would be the more proper one in the general problems of political economy. When we have to consider the case of a person who is obliged to work for somebody else, in contradistinction to the person who is not, then, and then only, is a distinction between wages and other earnings necessary.

35. *Of the Different Kinds of Labor.* Prof. F. A. Walker divides labor and laborers into the following five classes:

I. The class who work for themselves and by themselves, either on their own land or in mechanical trades. This class would include small farmers taking part in the cultivation of their own ground, shoemakers who owned and sold their own products, as well as many other workers in mechanical trades. These persons combine the functions of laborer and capitalist.

II. The tenant occupier of land who owns the whole produce, subject only to the deduction for rent.

III. Persons who render personal services for pay, but not

in order to assist their employers in production. Such persons are domestic servants, soldiers, and clergymen.

IV. Persons working for hire who are paid out of the product of their industry, and whose employers expect to make a profit out of their services.

V. Persons who employ and manage labor, and who conduct and control business operations.

There is, however, no one classification which will answer all the purposes of economics: the various kinds and conditions of labor merge into each other in such a way that a scientific classification is scarcely possible. From the point of view of practical politics the most important distinction is that between laborers who work by time, that is, who are employed by the hour, day, or month, and those whose gains depend entirely upon what they produce, irrespective of the time it has taken them to produce it. The importance of this distinction arises from the liability of workers by time to be dissatisfied with their wages. When one's gains depend upon what he actually does, he can more readily decide upon the justice or injustice of what he receives than when he works by time. Whether the day-laborer talks about his own wages, or whether the philanthropic public talk about his wrongs, there is in either case an entire want of perception of the relation between the money he receives and the wealth which he is helping to produce. When one works by the piece for an employer, the evil is lessened, though not entirely done away with. It may be difficult, and even impossible, for the laborer to decide to his own satisfaction whether what his employer pays him per piece is the just equivalent of what he does on that piece. Yet the relation between his labor and what he receives from the product is more evident than in the case of the day-laborer.

The man who sells the products of his labor directly to the public is on a higher plane than either of the preceding: he buys such materials as he needs where he can get them on the best terms, he labors as much or as little as he pleases, and he sells to the best advantage he can. His position is therefore

such as to give him a much more accurate view of his relations to society than if he is subject to an employer. In buying his material he feels that he has the whole market to choose from, and that it is wise to be satisfied with the price which he is obliged to pay. If he finds that his product will not command so high a price this week as it did last, he accepts the result as one of the obvious necessary drawbacks of society, and does not fight against the inevitable as the day-laborer sometimes does. If he finds an increase in the price of his product, he takes prompt advantage of it, and does not see the employer get all the advantage of it as the day-laborer does.

From the laborer's point of view it is unimportant whether, when he works under an employer, he is engaged in productive or unproductive work. That is to say, it makes no difference whether he is merely administering to his employer's gratification by taking care of his horses, beautifying his grounds, and administering to his wants, or whether he is making things for him to sell. But from an economic point of view this distinction is the most important one of all. In other words, Walker's third class, whose services to society terminate with their employers, form economically a class by themselves, having entirely different functions from those of all other classes.

36. ***The Modern Organization of Labor.*** If we compare our industry with that of past ages we shall see that its most remarkable feature is the large scale on which manufacturing operations are conducted, and the number of persons who contribute to each product. Necessarily connected with this is a complexity of operations formerly unknown. A hundred years ago there was only one best way known to make every part of a gun, and that way had been known and followed for so many generations that any person of fair mechanical talent could learn to make a gun as well as any one else. In nearly all the trades a regular apprenticeship was gone through with; the boy became a journeyman, and the journeyman in time became a master-workman. Each did his work as generations

before him had done it, and each supplied only a limited community immediately around him. Transportation was so costly that nearly all bulky commodities had to be produced near the place where they were consumed, and none but those which had great value in a small space could be transported to any great distance overland, except at a corresponding disadvantage.

Modern inventions, especially the steam-engine, the railway, and labor-saving machinery, have changed all this. Three new factors have come into play:

I. *The division and combination of labor.* Instead of one man finishing an article for himself, he may do only a minute part of it, and it may go through scores of hands before being finished.

II. *The substitution of labor-saving machinery for human hands in production.* Single pieces of machinery will do work which would have required hundreds of men; thus production on a large scale is facilitated.

III. *The construction of railways*, whereby it has become possible to collect and manufacture most articles in great central establishments.

These three factors are inseparably connected. Without cheap transportation manufacture on a large scale could not have been advantageous. Labor-saving machinery can be used only when the sale of the commodity is sufficiently great to justify the construction of the machine.

37. *The Division of Labor.* The term *division of labor* is applied to that system under which, instead of each laborer completing an article of manufacture, a number of laborers divide the work up in such a way that each person shall do repeatedly a small portion of it. A striking example is seen in a modern American watch-factory. Instead of one person making a whole watch, hundreds of hands unite their labors. Each different kind of wheel is made independently by a separate person. Each person who makes these separate parts puts his product in a little case by itself. An operative takes

from each case the parts necessary to make one watch, and puts them in a box. He is doing this nearly all the time. The box containing the parts necessary to one watch is handed to an operative near one end of a long table. This operative puts together a certain portion of the watch, and passes it to the next one. The operation is repeated as the box goes from hand to hand, and thus, in a few minutes, what at one end of the table had been a miscellaneous pile of screws, wheels, and pieces of brass appears at the other end of the table a finished watch.

The advantage of the division of labor is that a given number of persons can complete a much larger product than they could working singly. The reason of this is that a skill is acquired in the performance of one operation which could not be acquired if the person had to learn a great many operations, and that the time of passing from one to the other is saved. Moreover, the number of tools and other appliances required is greatly diminished. If one person had to finish the product, he would need to command all the tools necessary for all the processes. When doing but a single process, he only needs the tools necessary for that one.

The disadvantage of the division of labor is that when carried to the fullest extent it dwarfs the mental development of the individual. But lamentations over the sad lot of the man who spends his whole life in making the tenth part of a pin belong to the moralist and philanthropist, rather than to the economist. Such a man may be regarded as an extreme example of the effects of civilization, since his life contrasts most strongly with that of the savage roaming at pleasure over the plains.

38. *Labor-saving Machinery.* Before the invention of cotton-spinning machinery and power looms, wool had to be spun and cloth woven by hand. "Each weaver's cottage formed a separate and independent little factory. The yarn for his warp was bought by him in a prepared state, the wool for his welt

was carded and spun by the female members of his family, and the cloth was woven by himself and his sons." * Of course the present system was not substituted for this ancient one at a single step. The greatest step, however, and that from which it is usual to date our modern cotton manufacture, was the invention of the spinning-jenny and throstle, by Hargreaves and Arkwright, about 1770. The result of this is that more cloth is now manufactured by a limited number of operatives than without machinery could be produced by the united labor of the whole world.

The invention and application of labor-saving machinery is a process which is continually going on, and to which it is difficult to see any limit. The mere enumeration of the kinds of machinery now used in special branches of manufacture would fill a book. The boots on our feet, the coats on our backs, the watches in our pockets, the furniture in our houses, are now mostly made by machinery, and all that human hands have to do is to direct and feed the machine.

39. *Steam Transportation.* A century ago the number of people who could be supplied with any but the lightest articles of manufacture from a single point was greatly limited by the cost of transportation. It is difficult for us to imagine a state of things in which goods could be brought overland from one point to another only in wagons drawn by horses, mules, or oxen. Steam navigation has done much to facilitate transportation across the ocean, but has been more effective in facilitating intercourse between men than it has in transporting goods, since even now the heavier and cheaper style of goods are still carried across oceans by sailing-ships. But on land the railway has worked a complete revolution. The most important effect of this revolution is this: that all but the heaviest goods can be carried a thousand miles at a cost which is comparatively small compared with that of their manufac-

* Encyclopædia Britannica, 9th edition. Art. Cotton.

ture on a small scale. Roughly speaking, the cost of transportation over long distances on the competing lines of railways is from three quarters of a cent to two cents per ton per mile. A pound weight is carried from one to two thousand miles at the cost of a single cent. If a pair of boots be made in New York and delivered in Chicago, the additional cost due to transportation will not be ten cents.

Thus arises a tendency to concentrate in great establishments the manufacture of those articles which are widely used and are not very heavy. We may imagine that ten millions of people scattered over a tract a thousand miles broad could have all their clothing, boots, furniture, and books made at one central point. This would enable the division of labor to be carried to the greatest extent, the most improved forms of machinery to be introduced, and all the advantages of manufacturing on a large scale to be made available. Although this state of things is by no means reached, we see a continual approximation towards it, in the increasing number of great manufacturing establishments which can supply large tracts of country with goods more cheaply than they can be made in the place where wanted.

To do this successfully requires organization. In organization two elements are necessary: there must be willingness on the part of laborers to become parts of the organization, and to work conscientiously and persistently in that capacity, and there must be organizers of their labor. To the latter class our attention is next to be directed.

40. *The Organizers of Labor.* If the laborers whose work is to be combined in the modern system could all work together in unison, and do everything necessary to success without any one to guide and direct them, modern society would be very different from what it is. But as a matter of fact they cannot do this. Thus the necessity of an organizing power arises. This organizing power is as important as the labor itself; and in one sense it is more so, because there are

hundreds of men who are fit to labor to one who is fit to organize and direct.

We may illustrate the necessity of an organizer by adducing a familiar and not at all extreme case, that of building a house. When one looks at a house in connection with labor, he is prone to think of it merely as the product of the work of so many bricklayers, hod-carriers, carpenters, plasterers, and glaziers. But if we look closely into the matter we can see how badly these laborers would have got along without a managing head. The bricklayers would not have known where they could have bought the brick and sand suited to the house on the most economical terms. They would probably get all their material at once, and on mixing their mortar find that they had forgotten the necessity of its ripening before the building was commenced. During the week or two required for this purpose they might have to remain idle. On commencing work they would have endless trouble in deciding what each man should do and how the money should be divided. They would probably misunderstand the plans, build wrong, and have to begin over again in consequence. When the time came to put in the first window-frame they would find that the carpenters were not ready with the material, and would have to wait for them. The same difficulty would occur in laying the joists, and would repeat itself oftener and oftener at every stage of the process. The final result would be either that the house would never get built at all or would get very badly built, and that only after the men had put into it twice as much labor as they would have done under competent direction.

To describe the functions of the manager more in detail: He must see that all the necessary raw materials are purchased in the best markets and at the proper time; that they are of proper quality and are suited to his machinery and labor; that they arrive at the factory at the proper moment; that the factory is ready to receive them, and that they are so cared for as not to suffer deterioration from any external or internal

cause; that the machinery is kept in good order; that the various employés know their business; that the least possible amount of waste occurs while the processes are going on; that the things made are those which other people want, and that they are made in the proper quantities; that arrangements are made for preserving them until they can be sold; that the employés are paid at the proper times; that useful improvements in the machinery are introduced, while no money is wasted in unsuccessful experiments; that the proper number of operatives are at work in every department, and that they are the persons best suited to perform their respective duties. In a word, the manager must see that every one of the countless causes that might lead to the injury of so complicated and delicate an organization is carefully guarded against. The ability to do all this well is so rare that we must look upon the manager as the most important factor in the work of production on a large scale.

41. *The Efficiency of the Laborer.* We have spoken of the laboring unit in a way which might imply that one such unit could be considered the equivalent of another. Such, however, is by no means the case. It is impossible to measure the labor of a railway manager and that of the digger of a canal by any common standard. This is obvious enough. But it is also true, though not so obvious, that we cannot assume any equality between laborers of different classes, even when they are engaged in similar kinds of work. The result of the day's work depends upon the man who does it, what he does it with, and what he does it for; and when any of these three factors are different the result is different. Laborers differ among themselves in hereditary capacity for work, and their efficiency depends upon their food and their abilities. A single beef-fed English laborer is the equivalent of several, we could hardly say how many, under-fed Russian peasants. If we are to compare them, we should consider a group of the latter as representing a single one of the former.

Disposition to labor is equally important with physical strength. Certain races of men will not work more than absolutely necessary for their subsistence on any account whatever; other races would be unhappy without constant employment.

This explains the fact that those countries where wages are high compete successfully with those where they are low. For example, although nominal wages are fifty per cent higher in America than in England, and twice as high in England as on most of the continent of Europe, yet American manufacturers of cotton can compete with those of England on even terms, while but few European countries can compete with either of them, and feel obliged to protect their home manufacturers by protective tariffs. The docility and *know-how* of the American enables him to manage machinery so much better than his European competitor that the cost of the labor put into a yard of cotton is actually less here than in any other part of the world.

Of course the efficiency of the laborer depends also upon his adaptation to his special work. For the work of digging a canal nothing but physical strength is necessary. But if we consider any work higher than that of carrying and digging, we shall find that the laborer needs qualifications of a higher order than mere physical strength. If he learns a trade, the time required for this purpose will depend largely upon his natural aptitude. If he does not possess a certain amount of skill he can never be entrusted to manage a machine. Thus his efficiency would be greater or less according to his natural or acquired qualities. Finally, it goes without saying that one class of laborers might do one kind of work better, and another class another kind. As an example showing how national habits affect the efficiency of labor, we may cite a drawback under which manufacturers labor in Russia. The religious holidays, which the common people of that country consider it imperative to observe, are so numerous and come at such irregular intervals, that great manufacturing establishments requiring

regularity for their economical management can scarcely be managed without the aid of foreign labor. When the holiday comes, the Russian laborer must leave his work no matter what the state of affairs, the pressure of steam, or the need of his being present to carry on the operations of the establishment.

42. *Friction of Exchange.* The kinds of labor described in the preceding sections are those entirely devoted to the work of production. But if we use the terms labor and laborer in their most general sense, we should include all exertion of the human faculties necessary to keeping the social organism in operation. Among the operations necessary for this purpose, one of the most important is that of exchange; hence whatever time or work is required in effecting exchanges should be included under the head of labor. We have, therefore, another class of laborers whose function it is merely to buy, to take charge of and to sell commodities, without any changes being made in them in other respects. This class includes bankers, brokers, merchants, shop-keepers, and retail dealers of every kind.

On a superficial view this labor does not really appear to be a necessity of the social organism. If the producer of a commodity sends it at his own expense to the very place where the consumer lives, and the latter is willing to go and get it, why should a third party step in to take a portion of the price? The answer is that if his services were not valuable, men would certainly not pay for them. Quite possibly, if human nature were a little nearer perfection than it is, and if men knew their wants exactly and adopted the best system for supplying them, we could get along with a good deal less labor in conducting exchanges. There is a certain analogy between the necessity for this labor and friction in machinery. In a perfect machine, as it is conceived in the mind of the mathematician or physicist, there need be no friction. But in all machines actually made by man there is friction, and the mathematician who calculates the forces necessary to run it must take this friction into account as a resistance requiring additional power to be

applied. So the cost of getting a barrel of flour from a firm in New York City to a baker in England is not only the cost of freight and of the handling and carrying of the flour, but also certain profits or wages of jobbers, grocers, shippers, and others who have to buy the flour from one party and sell it to another. From the analogy of this labor to the power required to overcome friction in a machine we shall call what it overcomes *friction of exchange*.

In the wholesale markets, where goods are bought and sold on a large scale, the friction of exchange is very small. It attains its minimum in the sale of stocks at the great money centres. The commission of the broker is here only about one eighth of one per cent. It is larger where goods of any sort are traded in, because the man who buys the goods must always run some risk of their deteriorating on his hands; but in wholesale transactions it is still too small to be a very important factor in the ultimate price to the consumer. The friction attains its maximum in the sale at retail of those commodities which are most likely to deteriorate or become worthless in the hands of the dealer. It is also great in the case of those goods sold in quantities so small that the time spent by the dealer in showing them to his customers, or wrapping them up, has a value equal to an important fraction of the value of the goods. For reasons which the reader can readily work out for himself, books, fancy goods, including haberdashery, and fresh vegetables, are among the things for which the friction of exchange is greatest.

With the labor necessary to overcome the friction of exchange must be included that of merely inducing people to buy things which they would not buy if left to themselves. Very often a man who does this successfully may get one third, one half, or even two thirds of the price. The labor of travelling book-agents is an example. In country districts, where there are no stores within convenient reach, the services of peddlers may be really necessary, but in cities we must consider their principal function to be that of persuading people to buy their wares.

CHAPTER VII.

THE INCREASE OF POPULATION.

43. If the population of the world were immortal, the general conditions of production, exchange and consumption would not differ materially from those that actually exist. Hence in the general review which we have thus far taken, it has not been necessary to consider the economic effect of the continual death of men, and of the constant stream of new births by which the ranks of humanity are kept full. But when we apply economics to social questions, it often becomes necessary to take the effect of human mortality and growth into account. The introduction of this additional cause affecting wealth necessarily modifies our economic conclusions, and requires new and different statements. The general rule is that every man not only has to live, but to support his family also. The principal question which arises in this connection is that of the economic effects of the more or less rapid increase of population. These effects were discussed in all their relations, and elaborated into a complete system, by Malthus, in the early part of the present century, and, in consequence, the conclusions to which he was led are commonly known as the *Malthusian theory of population*. This theory has been accepted as sound by a large majority of economists; and those who have contested it have probably done so from a misunderstanding of its true import. Without attempting to follow Malthus in detail, we shall present the theory of population in as clear a form as possible.

44. Let us suppose that every married pair has four children who grow to maturity, marry, and have four more children, and so on indefinitely. It is evident and certain that in such a case the population would double with every genera-

tion. If the average duration of the generation was one third of a century, then in 33⅓ years the population would be multiplied by 2, in 66⅔ years by 4, in 100 years by 8, and so on.

Continuing the process, we see that the population would be multiplied by 8 during the period of every century. That is, it would increase in a geometrical ratio, or in geometrical progression.

The ratio of this progression would of course depend upon the average number of children in each family who grew to maturity and married. If this number were only three instead of four, then the population would only increase by 50 per cent in each generation, and a little more than 3½ times in each century. That is, the rate of increase will depend on the fertility of the population. It is, however, evident that if all the conditions remained the same, generation after generation; if each generation had precisely the same degree of health, and the same appetites and means of support as its predecessors; if the difficulty of supporting a family did not in any manner change, then the rate of increase would always be in the same ratio; that is, the numbers of the population at any equidistant periods of time would form a geometrical progression. This fact was expressed by Malthus in the statement that population *tends* to increase in this progression—a statement which his opponents frequently misstated by assuming it to mean that population does actually thus increase under all times and circumstances.

There is nothing in what we have said which presupposes any definite rate of increase. If, instead of four or three, only two children of each family should grow to maturity and marry, there would be no increase at all. If only one, the population would be reduced to one half in each generation. But the law would still be that of geometrical progression, the only difference being that in the one case the common ratio of the progression would be unity, and in the other it would be less than unity.

The general rule is, however, that as men are actually con-

stituted the ratio will be considerably greater than unity, unless the increase of population is kept down by external causes. Yet apart from these causes different races and classes of men show very different degrees in the tendency to increase.

45. It will conduce to clearness if we begin by considering the causes which tend to check the increase. They belong to two classes.

Firstly, moral causes acting upon the individual and leading him to postpone or avoid marriage.

Secondly, physical causes resulting in the death of offspring.

The first of these causes is probably a product of civilization. Savage and barbarous tribes propagate almost entirely by virtue of an animal impulse, and without consideration of what shall become of the creatures who owe their origin to that impulse. This is true not only in the lowest states of society, but frequently among the lower orders of some civilized societies. The lower order of the colored population in the United States may be taken as a case in point. The wants of this class of people are so simple, and, in our country, so easily supplied, that the problem of supporting a family is one to which little consideration is given in contracting the marriage relation. This, of course, is due also to the improvident character of the race. Statistics show that the problem of supporting a family exerts a much more serious restraint upon the lower classes in European countries, who before they marry take into consideration the necessity of supporting children.

As we ascend the social scale we find the restraining influence to increase, and to reach its maximum with those classes who have a social position to sustain and but limited means to sustain it. The wealthy classes in all countries, being above the fear of want, are subject to no moral restraints from this source.

Secondly, when moral restraint proves an insufficient inducement to the keeping down of increase, then want and disease step in and do the work by carrying off those children who are

least fitted to cope with the world. Infant mortality attains its maximum among the lower orders of men and the crowded poor of great cities, and is at its minimum among the classes who are able to supply their children with everything necessary to their continued existence.

It must be specially remarked that these two causes operate very differently among different classes of people. The first principally affects the middle intellectual and professional classes, and has little influence upon either the wealthy or the most degraded ones. The second cause operates principally among the poor, and among them naturally varies inversely as the first cause; in other words, the less moral restraint the poor impose upon themselves the greater the mortality among their children.

Eliminating the two causes just described, we shall have the measure of the unrestrained tendency to increase. This, as already remarked, is very different among different people. In France it is so small that, notwithstanding the small amount of emigration, the increase of population is very slow. The same is true of native Americans. Although our population has very generally increased by nearly 30 per cent in every decade, it would seem from the Census reports that the largest portion of that increase comes from immigration or from foreign-born parents. The state of things thus indicated is one most worthy the attention of the student of social science.

46. This conclusion that different classes of men tend to increase at different rates gives rise to one of the most important questions affecting the future of our race. Enlightened men now recognize the fact that the qualities of the children born into the world are determined by natural causes. In individual cases the causes entirely elude our scrutiny; but when we consider general averages among large collections of men, we have open to us a very fruitful field of investigation. The maxim "Like produces like" is found to be an approximation to the truth in the general average case. For example,

statistics show that vigorous and healthy parents have a larger proportion of vigorous and healthy children than weak and sickly parents do. Talented parents have a larger proportion of talented children than dull parents do. Qualities very frequent in certain races are almost unknown among others. The laboring classes in European countries rarely, if ever, give birth to children capable of rising above the station in which they are born. Certain races of men are incapable of understanding the methods of scientific investigation. The student of ethnology finds differences among men who to the ordinary observer are quite alike in all their qualities. The success of the English people is very largely due to a common-sense turn of mind, leading them to look upon things as they actually are, and to govern themselves accordingly, instead of being carried away by the search after "el Dorados" and Utopias which has been the curse of the world.

When the laws of descent are more fully investigated, it will probably be found that the characters of children depend not only upon the characters of the parents, but upon their surroundings. It may possibly be found that when a race is thrown into a new situation, by emigration or otherwise, and its members thus stimulated to new activities and brought into new relations to the world, a higher average of talented offspring is the result. The establishment of such laws is, however, still a work of the future, and until they are established a satisfactory theory of population is out of the question.

The economic application of the preceding principles arises in this way: The kind of labor in which a man is fitted to engage depends very largely upon the qualities with which he is born. We may trace a regular gradation in the orders of labor, from the work of the day-laborer, which is at the bottom of the scale, up to the functions of the great administrator, ruler, and philosopher, which are at the top. The higher up we go, the rarer the combination of natural qualities which the work requires, and, by a law of value hereafter to be laid down, the more important are we to regard the work. The good of

society requires that the number of people who are born capable of performing each separate kind of labor should be approximately proportional to the number required for its performance. Measured by this standard, there has been up to the present time a comparative scarcity of men of the higher orders, and a comparative redundancy of men of the lower orders. The question whether this inequality is to increase or diminish in the future is involved in the law of descent. So far as our imperfect knowledge of the subject enables us to see into it, the balance of evidence seems to threaten a continued scarcity of the higher orders of men. It would seem that the race, in this country at least, is less prolific the higher we ascend in the intellectual and social scale. There would therefore be an absolute diminution in the proportion of men capable of performing the higher functions of society, were it not that such men are born to a greater or less extent among all classes of society. This continual replenishing of the higher ranks from births among the lower ranks encourages us to believe that the former will, at least for some time to come, keep their relative numbers; but whether these numbers will increase in the proportion that philanthropists would like to see them increase is still an open one.

47. The Malthusian theory of population is so frequently misapprehended that it has almost become a by-word among some economic thinkers. It is proper, therefore, that we should see clearly in what it consists. It applies to the question of an increase of population the same method which is to be applied in all scientific investigation; that is, it considers the causes one at a time, commencing with the most general ones. In economics the most general causes are the qualities of human nature, because these are found among all men, while other causes depend upon the situation in which men are placed. Now, considering only the tendency of the race to propagate, and making abstraction of all changes in its condition, it is unquestionably true, as already shown, that the popu-

lation will increase in a geometrical progression, the common ratio of which will depend upon the disposition to propagate. This common ratio is greater than unity among almost all races. We might almost say that it is necessarily greater than unity, because if less than unity the race will die out by virtue of its own inherent tendencies. Now it is certain that the number of individuals who could gain a subsistence upon the surface of the earth is limited. It is therefore perfectly certain that if the tendency to propagate should act without any restraining influence whatever, the ultimate result would be a larger population than the earth could support.

So much has been proved by Malthus. Those who misapprehend the theory interpret it as meaning that the increasing numbers will be kept down by positive starvation. But this does not follow at all. We have already shown that a moral restraining influence is always at work, at least among the intelligent classes. To say that a time may come when the whole race cannot find adequate subsistence is the same thing as saying that certain classes of men will not be able to support large families. Now the question whether a man will or will not be able to support a family is one which he can himself decide in advance. Intelligent people reaching a decision on this point will govern themselves accordingly. It is only the unintelligent and reckless classes who will give no consideration to the subject. The only question, then, which can remain is whether we shall always have a reckless class of this kind in such numbers as to exceed the limits imposed by the conditions of subsistence. This question is one which the future alone can answer. All the economists of the present time can do is to gain a clear conception of the various causes at play, and then to proceed intelligently in the investigation of the laws of descent.

CHAPTER VIII.

OF FLUCTUATIONS IN ECONOMIC PROCESSES.

48. If the population of the country were nearly invariable; if each individual of that population ate the same quantity of each kind of food year after year; if he wore the same kind and number of clothes; if there were no change of fashions in life; if no improvements were made in the mode of supplying wants, then there would be no great fluctuations in business. Every producer would know beforehand how much of his product would be demanded by the community, and at what price; he could make his calculations and employ his laborers accordingly, and those embarrassments which so trouble the whole business community would be nearly unknown. As a matter of fact, however, modern improvements in organizing the productive capacities of society have introduced fluctuations in nearly every department of trade. What was fashionable last year in ladies' wear is not fashionable this year; and what is now fashionable may not be wanted hereafter. Thus manufacturers and dealers are in a state of uncertainty as to what product they should make in order to meet the future demand, and have to run the risk of losing money by making what they cannot sell, or of failing to gain a profit by not making what is wanted. If every producer could make one thing as easily as another, and if the machinery constructed for one purpose could be applied to another, the drawbacks arising from this cause would not be serious. But neither the machinery nor the operatives of a great factory can suddenly change their work without loss. The greater part of the machinery of almost any great factory would be nearly worthless for any other purpose. Yet, since the demand does change from time to time, it is essential that, so far as possible, many

agencies employed in production shall admit of being adapted to a new employment. We have to consider how this adaptation is effected, and at what disadvantages. We begin with changes in the pursuits of men.

49. *Changes in the Direction of Labor.* It is sometimes assumed that there is no power of adaptation among men, and that they are as incapable of turning to new employments as the machinery in the factory is of being turned to new uses. Of course this is a subject on which we can lay down no universal propositions, because the case differs with different men and with different employments. The inhabitants of some countries have much more versatility than those of others. Americans are supposed to possess this quality in a high degree, and are, among all people, those who are best able to change their occupation in obedience to a change of demand. The watchmakers of Switzerland and the spinners of Manchester approach the other extreme, in being able to do little but what they have been taught to do. Again, adaptability varies with the nature of the employment. As a general rule education increases this quality, while a lifetime of training in a specialty diminishes it. A professor of one science can commonly teach another, and a merchant who is successful in one kind of trade can generally change to another. On the other hand, the cases in which mechanics can change their occupation without disadvantage, though not rare, are exceptional, and more exceptional as the occupation is specialized.

We have now to show that although men may not be able to change indifferently from one occupation to another, yet, indirectly, industry may be diverted from one occupation to another without serious disadvantage. We may place the question in the following shape: From the fact that a shoemaker cannot make clothes does it follow that, in case fewer shoes and more clothes should be required, the producers of shoes and clothes cannot adapt their production to the new state of things? The answer is, it does not so follow. Productive

industry may be changed from one channel to another without individual men changing their occupation directly from one to the other. The change may be effected in two ways, which we shall illustrate by showing how a certain amount of industry could be changed from the occupation of making shoes to that of making clothes.

It must first be remembered that, from various causes, men are continually leaving each occupation and new ones are taking their places. They are leaving in consequence of death, of old age, of inability from various causes, as well as from change of occupation. If no new hands should engage in the work of making shoes during the next ten years, it is highly probable that the number of persons engaged in the occupation would be reduced to one half through the causes just cited. This may even be an under-estimate; it is not unlikely that from ten to twenty per cent leave the occupation every year. Now, there are few if any commodities the want of which by the community can fall off permanently in a more rapid ratio than this. Hence diminished demand for any one commodity may be completely responded to by no new producer undertaking the work of producing that commodity.

Conversely, it is readily seen that an increase in the production of clothes can be brought about by a corresponding increase in the number of young men and women who learn to make clothes. Thus we have industry changed from shoemaking to clothes-making, not by individuals passing from one occupation to the other, but simply by having those young men who would have joined the ranks of shoemakers change their purpose and join the ranks of tailors.

The other method of making the transfer is also an indirect one. Let there be an increased demand for clothes and a diminished demand for shoes. It will be found that a certain number of persons now engaged in miscellaneous occupations can forsake those occupations and become tailors. Perhaps they were once tailors. Let the occupations they leave be A, B, and C. Then we shall have occupations A, B, and

C requiring additional laborers to fill the vacancies thus arising. Some of these vacant places may be filled by the shoemakers. If the shoemakers themselves cannot fill them, other people can do so whose places the shoemakers can take. There may be a chain of any length, occupation Z being supplied from occupation Y, occupation Y from occupation X, and so on, until we find one which is supplied by the unemployed shoemakers. Now since in all these operations the number of people engaged in these intermediate occupations has remained unchanged, while there has been an increase of tailors and a diminution of shoemakers, the result is the same as if a certain number of shoemakers had changed their occupation to that of making clothes. We may therefore assume that it is possible for industry to change from one occupation to another in response to the fluctuations of demand, and that this will result in the same way as if every producer could change from one occupation to another at pleasure.

50. *Competing and Non-competing Groups.* Are we to assume that there is no limit to the changes which may thus be made in the industry of a country? Can every occupation be indirectly recruited from the ranks of those engaged in any and every other occupation? It is evident that we cannot answer this question absolutely in the affirmative. It is certain that an increased demand for college professors and railway directors cannot, even indirectly, be immediately responded to from the ranks of day-laborers. On the other hand, it is equally difficult to lay down an absolute line and say that no person from below this line can step above it. We must admit that an increased demand for college professors could be partly met by promoting teachers of high-schools; the places of the latter could be filled by teachers now of a lower order, and these places again might be filled by men in various ranks of life who possess the art of teaching; their places by men of a lower order, and so on; so that it is difficult to say just where the limit would be found.

If, however, we go in the opposite direction, we shall find limits which, though not absolute, cannot be far overstepped. As a general rule it will be impossible for the class of unskilled laborers to engage in any occupation requiring skill, how great soever may be the demand. The very fact that they are unskilled laborers shows that they do not possess the qualities necessary to fill higher places. The latter command higher wages; and the fact that they are unable to command these wages shows that the defect is inherent in their constitution, and cannot be overcome, how great soever the inducement offered. They can change from one unskilled occupation to another: ploughing, tending horses and cattle, digging streets, planting, driving carts, and carrying hods are all open to them. In fact, it might be considered that the range of their possible occupations is wider than in the case of any other class, since there is no limit to the number of little things which a community would like to have done to promote its pleasure. Every owner of an acre lot would like to see it cultivated and planted with flowers; improved streets are needed in every city; with every increase of population more labor must be devoted to cultivating the ground. The result is that the demand for unskilled labor, although in one sense not large, yet in another sense is unlimited; and it is not an exaggeration to say that the unskilled laborer has more employments open to him in his grade than any other member of the community.

Skilled labor may be defined as that which requires a longer or shorter course of training in the use of the eye and the hand, but which does not require any training of the intellect. Since intellectual labor is generally more agreeable and better paid than skilled manual labor, it may be generally assumed that those who engage in the latter are incapable of the former. Yet the line is not at all impassable. The most we can say is that only a small minority can pass it. Moreover, skilled laborers are those who find it most difficult to pass from one occupation within their plane to another. The case of vacancies in the ranks of tailors being filled from the class of shoemakers is

an extreme one. It is much easier for either the day-laborer or an educated man to pass from one occupation to another than it is for a skilled laborer to do so.

The class of intellectual laborers, or those engaged in occupations requiring a high degree of education, can generally change their occupation upon their own plane without difficulty. But even here all occupations are not open to all educated men. An increased demand for eminent lawyers, skilful surgeons, and eloquent preachers cannot be responded to by any great increase in the number of those who can perform such functions. The response comes in the shape of increased prices for their services.

There is a grade which may be economically considered as yet higher, with which no competition from the lower grades is possible. It is that of the great organizers and administrators who manage the business affairs of the country. An increased demand for railway presidents can with difficulty be met. The number of people who can successfully carry on the operations of a great factory is very small. Correct judgment of demand or supply in the market cannot be bought for money. No amount of training can make a great novelist without natural qualities to begin with.

The idea of dividing the industrial population into non-competing groups was first worked out by Mr. Cairnes. He supposed a division into four groups instead of three as is supposed above. "First, at the bottom of the scale there would be the large group of unskilled or nearly unskilled laborers, comprising agricultural laborers, laborers engaged in miscellaneous occupations in towns, or acting in attendance on skilled labor. Secondly, there would be the artisan group, comprising skilled laborers of the secondary order—carpenters, joiners, smiths, masons, shoemakers, tailors, hatters, etc., with whom might be included the very large class of small retail dealers whose means and position place them within the reach of the same industrial opportunities as the class of artisans. The third layer would contain producers and dealers of a higher order,

whose work would demand qualifications only obtainable by persons of substantial means and fair educational opportunities —for example, civil and mechanical engineers, chemists, opticians, watchmakers, and others of the same industrial grade, in which might also find a place the superior class of retail tradesmen; while above these there would be a fourth, comprising persons still more favorably circumstanced, whose ample means would give them a still wider choice. This last group would contain members of the learned professions, as well as persons engaged in the various careers of science and art, and in the higher branches of mercantile business."

It is not possible, however, to assign any definite number to these groups; indeed the term group is used to facilitate the thought rather than to express the fact. The difference between men is one of degree and not of kind, the main fact being that each employment is open only to a limited class, and that the higher the employment the more limited is the class which can engage in it.

The conclusions hereafter to be drawn from this grouping of men are of the utmost importance in estimating the effect of changes in production upon the welfare of the different classes of society. All such changes are productive of increased demand for some kinds of services and diminished demand for other kinds. If these variations of demand can be met by corresponding changes of occupation, either directly or indirectly, in the ways pointed out, the equilibrium will be kept up. If they cannot be so met, there will be a disturbance of the equilibrium, to be restored only by a different scale of relative wages; one class commanding more, and another less, after the change. To foresee the effect of these changes we must refer principally to the past to see what their effect actually has been. In special cases, however, the principles above laid down will generally enable us to reach a fairly definite conclusion.

51. ***Transformability of Capital.*** Capital admits of being changed from one form to another, as labor admits of being employed in one direction or another. The transformation cannot be made so speedily as the transfer of labor; but, if we take time enough, there is no limit to its extent, as there is in the case of labor. A cotton factory can be changed into an iron ship with more economy than a hod-carrier can be turned into a lawyer. It is true that the transformation of capital necessarily involves a change in the direction of labor, but this change is mostly from one employment to another of the same order, and can be effected in the way just pointed out.

When we speak of such a transformation as that of a factory into a ship, we of course use the word in a different sense from that employed when we speak of transforming wool into cloth. To effect the transformation it is not necessary that any portion of the factory should be used in the ship; the result is brought about through changing the direction of labor from the work of keeping up the factory to the work of building the ship. The possibility of this being done without a total loss of all the value invested in the factory arises from the fact that the latter is continually wearing out, or, as already shown (§ 14), capital, like every other kind of wealth, is undergoing a constant process of consumption. The consumption of wealth which is capital differs from that of wealth which is not capital, or unproductive consumption, in this: that the value consumed is, in the case of productive consumption, reproduced under a new form and in increased amount, while in unproductive consumption we have nothing to show for the thing consumed except the benefits rendered to the consumer. Since the value remains unconsumed however the capital may be transformed, it has the permanence of an invested fund. Thus, a man who has saved a sum of money may have it to-day in the form of wool, to-morrow in the form of cloth, and the day after, through selling the cloth and buying boots, he may have it in the form of boots. His fund will

have remained unaltered, notwithstanding the variety of forms which the wealth represented by it has undergone.

Fixed capital is being consumed, as well as circulating capital. The rates of consumption are, however, very different in different cases. Great public buildings may last for centuries. A canal, if kept in repair, will last as long as the geological conditions of the country through which it passes remain unaltered. The buildings of a factory will probably be nearly worn out in the course of one generation, and its machinery in a few years. Thus, in order to keep up the fixed value of all the cotton factories of a state, it is necessary to continually spend labor in repairing all of them, and in rebuilding those which get worn out.

Suppose, now, that the business of manufacturing cotton becomes unremunerative, while that of trade with foreign countries becomes remunerative. Since trading requires ships, the prosecution of this remunerative business will require the building of ships. Let us imagine that ten manufacturers have each been devoting $5000 per annum to repairing and keeping up the machinery and buildings of their factories, and that without such repairs the machinery would be worn out in ten years. They may then say: "It is no longer profitable to spend money in keeping up our machinery and our buildings; we had better devote the sum which we have been spending in this way to the building of ships." If ships costing $50,000 each were the most profitable, the manufacturers could, with the money thus withdrawn, build one ship a year. This would require a diversion of labor from the work of repairing factories and machinery to that of ship-building. These two kinds of labor being of the same order, the change could be effected without any great economic disadvantage. The result would be that at the end of ten years the value of the factories would all have disappeared, and in its place would have appeared ten ships. During the whole process of change we conceive that the capital of the manufacturers remains unaltered, the diminution of one kind keeping pace with the in-

crease of the other kind, but the practical result would be that their factories would have been transformed into ships.

This particular example of transformation is perhaps the most difficult and troublesome, and we have selected it as an extreme case. The proposition we wish to enforce is that capital may change its form to correspond to any change in the direction of industry, provided due time be given to effect the transformation. In ordinary cases the transformation can be effected simply by no new capital being invested in the less profitable enterprises. In a growing country new factories are constantly being built and new enterprises undertaken. If any manufacture, that of cotton, for example, becomes unprofitable, it is certain that by erecting no new buildings or machinery for this manufacture, the proportionate amount of capital invested in it will diminish through the new investments of capital being diverted to other enterprises.

52. *Inequalities in Economic Processes.* The inequalities described in the preceding section are those which arise from changes in the demand for products, some being in demand at one time, and others at another time. But there are also fluctuations which do not arise from this cause alone, but which are unavoidable under almost any circumstances. To understand them, let us begin by imagining all the operations of production, exchange, and consumption to be going on with perfect regularity. We have first to show that under fixed conditions, that is to say, on condition that the quantity of every commodity produced and consumed remains unchanged, the transaction of a certain fixed amount of business is then necessary. If we trace the processes of manufacture, we shall find that the number of exchanges which have to be made are dependent upon the circumstances of the case; that to increase them will cause unnecessary waste, and that they cannot be diminished without the efficiency of the processes being impaired.

Take for example our old case of the coat. The farmer who

shears his sheep has very little knowledge of the location of the various factories for making wool into cloth. He cannot, therefore, sell directly to the manufacturers without running the risk of failure in finding the best market. Quite possibly he does not even know how or where he ought to send his wool. He therefore sells to some jobber whose business it is to know where wool is demanded and at what price. This is the first necessary exchange. If this jobber is himself acquainted with the wants of all the factories, or if the managers of the latter know where to find him, he will sell to them, making another exchange. It may, however, happen that a second exchange or even a third is necessary. There may be one dealer between the jobbers in the great central markets and the farmer, and there may be another between the jobbers and the manufacturer. Whether there shall or shall not be such "middlemen" is a matter depending upon the knowledge of the course of trade possessed by the various parties concerned, especially by the manufacturer and the farmer. This knowledge is one of the conditions which we suppose to remain unaltered, and thus the number of exchanges necessary for the most advantageous transfer of the wool from the farmer to the manufacturer are fixed.

When the manufacturer makes the wool into cloth he finds it more convenient to sell to cloth dealers than to the tailors who make it into cloth. One reason of this is that each tailor wants a great many kinds of cloth, coming from numerous manufacturers, while the products of each factory have to be divided among innumerable tailors. If then every tailor had to get each kind of cloth directly from the factory where it was produced, there would be a very troublesome number of transactions. So wholesale jobbing houses are established to purchase various kinds of cloth and sell it to tailors and other manufacturers of clothing. Quite possibly great manufacturers of clothing may find it to their interest to buy directly from the factory. Whether this be so depends upon their knowledge and upon the conveniences of business, and not upon the state of trade.

What is true of the making of wool into a coat is true of everything we wear or use about our houses. So as long as our means and our wants remain unchanged the population at large requires annually a certain definite number of suits of clothes, a certain number of houses, a certain number of loaves of bread, a certain quantity of beef and pork, and a certain supply of furniture. If every one supplied himself with these commodities at a uniform rate, or even if the rate were uniform for the general average of the community, then there would be no disturbance in the course of trade. The quantity of goods of every kind which every dealer could sell would be nearly the same month after month and year after year. Demand would change only with new sources of supply or new uses for commodities.

But the more rapidly society progresses the less is any such uniformity possible. The disturbances come from both ends of the line: from the consumer and from the producer. Some cause may lead a large body of the community to economize in the use of clothing. Then there will be a stagnation in all the operations of making and selling clothing, or of doing anything which is necessary for that purpose. When the occasion for such economy arises it is generally practised upon all articles of current consumption. When this is the case business generally is said to be dull. If some cheap substitute for a commodity be found by producers, then all business which consists in exchanging that commodity will be dull. Competitors capable of producing cheaper goods engage in production and lead to the old producers being no longer able to find a market without lowering their prices. They are perhaps driven out of business, and thus another perturbation occurs through trade having to find new persons for its managers. The conception which has now to be formed is this:

Firstly, we are to imagine a regular stream of commodities going through the various processes of production and consumption. The stream of wool passes from the prairies over certain railways, through certain warehouses and factories, and

terminates in the form of clothing. The stream of logs is flowing from our northern forest down the Mississippi and other rivers, through saw-mills, over railways, and into our houses. A stream of cotton is passing from various points in the Southern States, flowing into ships and there dividing, one portion crossing the Atlantic and another portion finding its way to New England factories. A stream of wheat has its origin at various points in a large extent of country, flows over certain railways and into certain cities, passing into flouring-mills, flows from them over other railways into bakers' shops and into our houses, where it ends in bread. Streams of pork are going over nearly the same routes. A stream of hides is flowing out of Texas towards our Northern States.

Secondly, we can imagine a regular and normal state of things so that all the streams would flow out at a constant and uniform rate. Then the exchanges which they imply would be definite in number, and would be invariable except as population, production, and consumption increased at their regular rate.

Thirdly, as a matter of fact they do not flow at a regular rate, but rather in a series of waves. Of course an annual wave in most original productions of the soil is unavoidable, since we have a wheat-crop and a wool-crop but once a year, and each at a particular season. But these annual waves are soon smoothed off. Other waves rise from changes in the foreign demand. All these fluctuations are a necessary incident of economic operations, and do not imply anything abnormal in the conduct of society.

CHAPTER IX.

PRODUCTION AND CONSUMPTION FROM A COMMUNISTIC POINT OF VIEW.

53. By a communistic view of economic processes we mean a view which includes only the processes themselves in their relations to the community at large, considered as a co-operative body, and leaves out of consideration those associated features which do not constitute essential parts of the process. The reason for this view is that the associated features alluded to confuse our thought, and stand in the way of our seeing the essential conditions of the problem.

Let us see what are the conditions essential to the enjoyment of a coat. They are the labor devoted to the production and transportation of the various materials of which the coat was made, their combination into a coat, the transportation of the coat to some point within easy reach of the wearer, and the act of the latter in going to that point and getting the coat. I say these operations are the essential ones. For it is certain that that coat could not have been enjoyed by the wearer without these processes. And it is equally certain that if these processes are all performed, he will have the coat. Now, that without which a result will certainly not be, and with which it certainly will be, is, in the highest degree, the essential condition of the result.

Besides these essential operations by which the coat was produced and placed in possession of the wearer, there have been certain acts of another kind. These acts have consisted in a certain number of persons in succession each calling the wool "my property" and receiving money from the following person in exchange for the right on his part to call the wool his property, and so with the various materials, and with the finished coat, which the wearer had to pay money for. Now,

these acts of exchanging the right of ownership, however necessary they may be (and they are absolutely necessary as society and human nature are constituted), are not parts of those operations of production and transformation which we have shown to be essential. The fact that we cannot get along without ownership and exchange in no manner modifies the fact that if the thousands of producers unite in performing all the operations necessary to making the coat and putting it into your possession, you will have it, and if they do not you will not have it. Now, our object in the present chapter is to leave out of consideration the processes of exchange and the rights of ownership, in order to show what necessary relations exist between the producing operations and the enjoyment of commodities. We call this view *communistic*, because the word communism is used to designate a system in which the private ownership of property is not recognized. We view economic conditions from this standpoint because it affords us the basis of solving a number of economic problems in an easy and simple manner which otherwise would be very complex.

54. We suppose it evident to the reader that the population of the country comprises some fifteen millions of laboring units, heads or members of families, who are producing commodities for the benefit of others. Farmers are producing wheat and corn; millers are producing flour; carpenters and bricklayers are producing houses; actors are producing amusement; tailors are producing clothing. If we add up all the bread, all the clothing, all the amusements, all the houses, we shall have in each case a certain sum total representing the entire production of each separate commodity by the whole community.

In return for his contributions to this sum total, each producer is getting a larger or smaller share of other sums total for his own use. By the process of exchange he gets small quantities of a large number of commodities in exchange for a considerable quantity of some one commodity which he himself

has produced. His welfare depends on how much of these separate commodities his labor will enable him to command. The more he puts in the better for the others, and the more they put in the better the chance for him to be supplied.

To fix the ideas, let us suppose that all these things produced are brought together into one central reservoir. We employ this conception merely to enable us to think of them as wholes rather than as scattered masses of parts. Then, every commodity which is brought into the reservoir will be brought in by some person or body of persons, everything will be taken out by somebody, and every commodity which is taken out will be consumed by some person or family. It is certain that nothing can be taken out except what has been put in.

An apparent difficulty may arise in making this conception correspond to the actual case. If we add up all the quantities of everything actually produced, we find that the greater part are taken out, not for the consumption of the individual who takes them, but for the purpose of being worked up by him and brought back to the reservoir in an improved form. For example, the wool which the drover throws into the reservoir is taken by the manufacturer, not to be consumed by himself, but to be made up into cloth. The tailors take the cloth out of the reservoir in order to throw it back again in the shape of clothing. But this process need not cause any difficulty. The ultimate object of the wool is clothing, and the ultimate object of everything is to satisfy the wants of individuals. The only consumption with which we are concerned at present is that of the commodities withdrawn by the individuals, not to be returned by them, but to be applied to their own uses. We therefore leave the wool and cloth out of consideration, and conceive the coat to be brought in, not as the sole contribution of the tailor, but as the joint contribution of wool-growers, shearers, railway managers, spinners, weavers, merchants, and tailors. We may, if we please, imagine a separate central reservoir into which nothing enters but finished houses, furniture,

bread, pictures, clothing, and other articles to be used for the support of those who withdraw them.

The economic welfare of each individual depends upon what share of these finished products he has the privilege of withdrawing, and upon nothing else. Now, as a first step towards understanding what causes affect the power of the individual to withdraw commodities from the reservoir, we shall have to make a distinction between causes which affect only the general welfare and those which affect individuals, or special classes. Everything which increases either the sum total or the quality of any commodity brought into the reservoir tends to increase the general welfare, because then there is either more of that commodity, or a better article, for everybody who wants it. If this commodity is one of which there is already an ample supply, then the increase to the general welfare will be unimportant. If it is something of which people stand in great need, and of which the supply is small, the increase forms an important addition to the general welfare. Moreover, in any case, the addition of any commodity will directly benefit only those who use that commodity. Now, economics and government policy can concern themselves only with the welfare of whole classes of individuals; and since one class has as good a right to their consideration as another, the general welfare is that with which they are principally concerned. Hence our first conclusion as to whether an economic cause is beneficial or injurious in its action must depend on whether it tends to increase or diminish the general supply of commodities brought into the great central reservoir. But as a matter of scientific interest, it is perfectly allowable and proper to consider how special classes and subdivisions of men are affected by economic causes.

Now, it does not follow, because an increased supply of some one commodity is brought into the reservoir, that of course everybody who wants that commodity can get more of it. It may happen that through the indirect action of the same cause a few unfortunate persons may be able to command only a smaller supply. We also must recognize the action of eco-

nomic causes which, without altering the total quantity brought into the reservoir, would result in that quantity being divided very differently among separate classes of men. If then we find it satisfactorily established that any economic cause will result in some class of men (carpenters, for example) being able to get a larger supply of commodities, we must see in which of two ways this cause acts. If it acts through a larger production of those commodities, then it is a public benefit of which the carpenters are simply getting a share. But if it is a cause which merely enables the carpenters to get something which otherwise some one else would have got, then it is merely transferring the benefit from one class to another, and is not to be regarded as an economic good, unless it can be shown that the commodities do more good when consumed by carpenters than when consumed by others.

This classification will enable us to make an important generalization. Those industrial and business efforts in which every man competes with his fellows by trying to supply a better article to his customers than his competitors can supply tend to increase the sum total of commodities produced and so promote the general good. Those efforts which consist in placing restrictions on competition by limiting in any way the freedom of everybody to produce as much as he is able can only benefit one class at the expense of others.

55. Let us now see what regulations would have to be established for the public good in the distribution of the sum total of products. The reason why regulations are necessary is that every one wants to get a share of a great many things, and especially of the useful and scarcer things. His welfare depends on what he can get, and as a general rule he is a safe judge of what he wants. But it is different with the things he brings in. These are for other people, and it is necessary for the public good that he bring in, not what he likes to produce, but what other people want to consume. How shall he be induced to do this?

In considering this question we shall assume that there is a central authority which can make and enforce what regulations it pleases. Let us see what would be possible to such an authority, and what, from the very nature of things, impossible.

I. The first regulation which we see to be necessary is that no one shall be allowed to draw things out of the reservoir unless he puts in an equivalent of something that somebody wants. But what kind of equivalent? If nothing more than an equivalent in labor, then everybody would put in what he found it easiest to make, and would neglect what he found it difficult to make. The result would be that there would be a great collection of those things easy to make, and a great scarcity of everything else. Since many useful things are hard to make, we must require something else than an equivalent in labor of production. We may, at this juncture, be guided by the principle that the quantity of each commodity brought in must, so far as possible, be so regulated as to be just equal to the quantity wanted to be taken out. But even under the most favorable regulations an accumulation of some things and a scarcity of others would be unavoidable.

II. The central authority would then have to remedy this inequality. It would perhaps say to the combined farmer and miller, "You are bringing in more flour than we possibly can eat, while the people cannot find enough good paper to write their letters on. Cannot some of you leave off making flour and begin the making of paper?" The answer would naturally be, "It is very easy to make flour and very hard to learn how to make paper. You must therefore offer us some inducement to change." The question would now arise on the part of the central authority whether some privilege or advantage must be held out to induce the makers of flour to learn how to make paper. If the principle is introduced that labor is the only measure of value, and that one person must gain no more than another, it would be impossible to make the change. Evidently the easiest way would be to offer some inducement for making paper rather than flour. Thus would arise that inequality in the

rights of different contributors to the reservoir which human experience in all states of society has shown to be unavoidable.

III. Having thus established the principle that inducements must be held out to secure the manufacture of the scarcer articles, the question would arise just how strong the inducement would have to be. The public at large would have an interest in getting the paper with the smallest possible inducement, and the latter ought to be so regulated that there should be an exact balance between the benefit from the increased supply of paper and the evil of offering a premium to paper-makers. This would require some measure of benefit and evil, so that the benefit of getting a little more paper, and the corresponding evil of paying for its production, would be set off against each other. This consideration would lead to the still further development of the plan.

IV. Every producer who made an addition to the supply of plentiful articles would do only a little good, while if he added to the supply of the scarcer ones he would do the more good the scarcer the article. The person who took away a supply of the plentiful articles would do very little evil to his fellows, while he who took a supply of the scarcer ones would do more and more evil in proportion to their scarcity. Thus would arise the idea of a measure of good or evil; that is, of *value*. The central authority might begin by establishing this measure in the case of each commodity. It might say: "Every man who brings in a barrel of good flour shall be held to do a good of $5; and every man who takes away a barrel to do an evil of $5. Every man who brings in a ream of paper shall be held to do a good of $2; and he who takes it out an evil of $2." Having established such a scale for every commodity in the market, the authority would await the result. The most equitable result would evidently be that every one should be allowed to take out a value equal, on the established scale, to that which he brought in, and that he should also be allowed to bring in what he pleased. If inequalities were still found, some things being plenty and others scarce, it would be necessary to con-

tinue adjusting the scale of values; and the final result should be such adjustment of the scale that the quantity of everything taken out should be just equal to that brought in. When this was done the operations of the imaginary society would correspond exactly with those which have grown up among us.

To what in this picture corresponds the case of non-employment of laborers? In our picture every man is at liberty to bring in as much or as little as he pleases, but laborers out of employment can bring in nothing, and so can acquire no right in the store. But what is meant when we say that laborers can find no employment? Everybody can find employment on some terms. What is generally meant is that they cannot find employment at satisfactory wages. Wages being what they can buy from the common stock with the proceeds of their labor, this is simply saying that what they are allowed to take out of the reservoir is not, in their opinion, the proper equivalent of that which they are willing to put in. For this we may say that there is no possible remedy so long as every one is at liberty to work or stay idle. He must be his own judge of the value of his services, and if he values them too highly nobody can help it.

56. *The Conditions of General Prosperity.* The careful thinker will note the general tendency of the preceding considerations towards one conclusion, namely, that general prosperity is but slightly affected by those measures in which the public take the greatest interest, that it can practically vary little from year to year, and that it can change but slowly from generation to generation. An illustration has already been adduced showing how illusory the popular estimates of economic well-being are apt to be. So accustomed are we to measure this well-being by entirely insufficient standards, that it may be well to review the subject once more from the standpoint of common-sense.

When is a community, a class, or an individual prosperous?

When they have plenty of money? No, for the money is of no use to them. It may enable them to buy, but it cannot do this unless the things they want to buy are first produced. Is a man prosperous when his goods and services are in demand? Not unless this demand will enable him to buy. When he sells he gives what is valuable, and does not receive a return until he buys something. The true answer is that he is economically prosperous when he is able to supply his natural and artificial wants without more labor than is conducive to his physical health. A class is prosperous when all its members enjoy this condition of prosperity; and when all classes in the community enjoy it, then certainly is the community prosperous, no matter how weak and badly off it may be when we measure it by the popular standard. Two opposing factors therefore come in—the supply or mass of commodities, and the labor by which that supply is obtained.

We have already shown, what indeed ought scarcely to need showing to a reasonable being, that, so far as the community at large is concerned, a necessary prerequisite to the supply of these wants is that all the agencies necessary to that end shall be produced. If all the people of the country are comfortably housed and supplied with all the food, clothing, furniture, books, and other wealth necessary to supply their wants, then that country is prosperous. They cannot enjoy this wealth unless it is produced: the houses must be built, the grain raised, the furniture manufactured, and the clothing made. Moreover, if the community is increasing, not only must the existing houses be kept in repair, but there must be a continual addition to their number. Conversely, if all these things exist, that is, if there are enough of houses, furniture, food, clothing, for everybody, we may be satisfied that no one will be compelled to go without these necessaries. It is indeed conceivable that they might all be owned by a few persons, and that those few might refuse to let the majority have any share of them. Practically, however, this is out of the question. No matter how rich and fortunate he may be, a man

can eat only a certain small quantity of bread, and he has not the slightest occasion for taking more than that quantity from the common store. Therefore he can have no motive for keeping anybody else from eating his share of the bread. He can only live in one house, and if he has more houses than that one he will be practically forced to let other people occupy them on such terms as they choose to make. He may own a ship, but if this ship could bring nothing but what he wanted for his own personal use he would burn her up. He bought or built her in order that she might bring things for other people. We may therefore lay it down as a practical rule, taking human nature as it is, that when a community as a whole is amply supplied, no industrious and well-behaved member of that community is likely to be in serious permanent want. Thus we are led to our second factor, the conditions of production.

It is equally evident that producing power is the necessary and sufficient condition that the wealth just shown to be required for prosperity shall exist. So long as the community possesses the necessary land and minerals, so long as it has factories, mills, and mines all in good working order, so long as its railways continue to run, and its laborers and merchants maintain their skill and good morals, so long will the necessaries of life be produced. The producing power can be impaired only by moral or physical causes acting upon the community at large. Of course, every cause which impairs confidence between man and man, or which leads one to doubt whether he will be compensated for his services; every cause which prevents producers from working, and every cause which cuts off the supply of material for them to work with, tends to diminish production. Hence the question of national prosperity resolves itself almost entirely into that of the stimulus to production.

This chapter is, more than any other one, the starting-point in the system of economic investigation which will be employed in subsequent parts of the present work.

CHAPTER X.

CHANGES IN THE SOCIAL ORGANISM WITH THE ADVANCE OF SOCIETY.

57. We may readily imagine the arts of production to remain stationary for long periods of time. Economics would then be reduced to a system in which it would not be necessary to consider progressive changes of any kind. Such, however, is not the case with our generation. We recognize two great forms of change: the one common to the whole civilized world, the other confined to particular countries. In the first class we comprise all those improvements in capital and in knowledge which lead to a constant increase or improvement in the products of labor. To a very great extent, increase of capital and increase of knowledge go hand in hand. The reason of this is that when we learn some new and better way of producing a given article, it is generally necessary to produce a new form of capital in order to utilize the discovery. To take a familiar example, when the compound engine was invented, the owners of Atlantic steamers, in order to utilize it, had to remove their old engines and put in new ones of the improved pattern.

Our knowledge of the best way of producing things is constantly increasing so rapidly that there is no immediate prospect of its reaching a stationary condition. Yet it would seem that it must ultimately approach such a condition, though it is difficult to say how many generations or how many centuries may be required. If we look closely into the matter, we see that the causes of progress form a very widely extended class. They include not merely improvements made and applied within any one country, but knowledge of the wants and capacities of foreign countries, and the results of that experience which is gradually teaching us the best way of doing many things. Such results tend gradually to embody themselves in fixed

habits. We readily perceive that the system by which the body of farmers on the prairies of the West exchange goods with various countries in Europe, Asia, and South America is exceedingly intricate in its details. Its successful operation depends upon the proper co-ordination of the efforts of manufacturers, merchants, ship-owners, and managers of railways. There being little real concert of action among these widely separated individuals, the co-ordination of their work is a matter of slowly growing habit.

Thus we may see that the commercial supremacy of New York is entirely a result of habit and of convenience. Men from all parts of the country send there to buy their goods, because they know that they can make a better selection and be more likely to find exactly what they want there than they can anywhere else. The very fact that so many kinds of people are thus led to going thither makes it pay the merchants of that place to supply themselves with every possible kind of goods to meet the demand. It does not pay the merchants of Boston to keep on hand so large a supply of everything the people want as is found in New York, because the people of the interior would not find it out, and are not in the habit of going in such great numbers to Boston to buy. The result is a tendency in the great movements of commerce of all countries to concentrate themselves along certain lines and in certain cities. The only limit to this concentration is the physical impossibility of handling more than a limited amount of goods within the limited space occupied by any one city.

In the same class of causes we must include the opening up of new sources of supply in distant and uncivilized countries. The great Asiatic countries, especially China and Japan, are gradually coming into communication with the rest of the world, and the resources of Africa are rapidly being discovered and opened out. Thus there is a gradual tendency towards a state of things in which every part of the world will supply every other part with the goods which it can make to the greatest advantage.

58. In the United States, besides this improvement in capital and methods of production, we have had a change due to the increase of population. This increase is productive both of advantages and disadvantages to the organism as a whole. The disadvantage is the continual diminution in the supply of the natural agents of production which can be commanded by each individual. The larger the population the less land each individual must draw his subsistence from. Of course until population reaches a certain density this diminution is not felt. No one needs more land than, with the least amount of labor, will yield him the food, cotton, tobacco, cattle, and timber necessary for his use. So long as the population is not dense enough to encroach upon this minimum, so long no disadvantage is felt. But when the individual has to raise his subsistence from a smaller surface of soil, he is obliged to introduce improved methods of cultivation, and to limit himself in the enjoyment of those products of the soil which require the cultivation of extended areas. Thus the denser the population becomes the more capital and labor it will be necessary to devote to subsistence, and the more liable the poorer members will be to suffer from privation.

The advantages of a dense population are obvious and numerous. The social attractions of great cities are powerful economic causes tending to bring men together in them. But the great advantage of a dense population in production arises from the increased facility with which closely associated men can co-operate in production. In a widely scattered population the division and organization of labor on a great scale are impossible, because these require large bodies of men to work together. The greater the number of such bodies of men the greater the variety of articles which can be made within convenient reach for the use of the whole community.

We must also notice that the result of improvements in production is not merely that each individual secures a larger supply of the necessaries of life, but that he gets those supplies of better quality and in a larger variety of forms, and therefore

can better suit his taste and peculiarities. The farmer of to-day does not eat any more than his predecessor did a hundred years ago, nor does the rich man of to-day necessarily eat more than the poor man. But the modern farmer has better food than the farmer of a hundred years ago had, and the man of wealth has a greater variety of food than the poor man. We have not many more chairs in our houses now than our forefathers had, but they are a different kind of chair. Our watches and clocks are more numerous, and we have many more books and pictures. Altogether we devote nearly as much labor to production as they did, but we get far more variety and better results from it.

59. Looking at the matter more closely, we perceive that these improvements in production involve a change in the relative proportions of men engaged in various classes of employments. The reason of this is that great improvements are confined to certain kinds of production. As one extreme case we may take the building of a brick house. We are scarcely able to do this to any better advantage than our ancestors. We have indeed learned to use machinery in moulding bricks, and in the case of large buildings we employ steam hoisting-apparatus to raise the materials as the walls go up. But, leaving out these comparatively small improvements, the labor of making the necessary material and erecting the walls is almost the same that it has been for thousands of years.

Improvements in agriculture may be considered as intermediate between the two extremes. By the use of sowing and harvesting machinery, and by improvements in methods of cultivation, we are enabled to secure our supply of agricultural products with only a fraction of the labor necessary a few generations ago. But the labor necessary to care for the crop and take it to market cannot be greatly diminished.

The extreme cases of improvement are those already described. They consist principally in the making by machinery, on a large scale, of what was formerly done entirely by hand.

The spinning and weaving of cotton, the making of watches, the sewing of shirts, and the printing of books and newspapers may be taken as cases in point.

60. One result of such improvements is a continual increase in the ratio of the urban to the rural population. Since it is absolutely necessary that men shall live on the farms which they cultivate, an agricultural city is an impossibility. Hence we must always have, besides the dwellers in cities, a certain population scattered over the country. But the labor of this population is more and more confined to the management of the rude products of the soil. The grain once harvested, the cotton once gathered, and the cattle once killed, everything that follows can be more advantageously done by large co-operating bodies of men. Such bodies are most easily collected in towns and villages. Hence, as improvements go on, a continually larger proportion of the population is found congregated in the cities. We may see this by studying our Census reports. We find that not only does each individual city increase in about the same ratio as the entire population, but new cities are continually arising.

61. A general characteristic of social progress, the enunciation of which is due to Herbert Spencer, will give us a luminous and comprehensive view of the subject. Progress consists in two continuous and connected processes, the one called *differentiation* or specialization, the other *integration*.

The former term expresses the fact that individual men become different from their fellow-men by the acquisition of special powers or faculties. The denser the population, and the more refined the special kinds of skill found among particular men, the more numerous the men who can do some useful thing better than any of their fellows. In a primitive state of society there are very few trades. As society increases men differentiate themselves more and more by following more numerous and specialized occupations. The extremes of differ-

entiation are approached when a man devotes himself to making some one part of a watch, or when, as in Switzerland, a manufacturing firm is devoted to making a particular kind of hands for a watch.

This process of differentiation necessarily implies that each individual must come into closer and more important relations with a continually increasing number of his fellow-men. The watchmaker of old needed but few customers. But the man who does nothing but make the hands of a watch must have a great number. Thus, as differentiation goes on, every part of the social organism becomes more closely connected with every other part. This increasing adaptation of the parts of the organism is called *integration*.

QUESTIONS.

1. Describe as fully as you can the natural requisites of production necessary in the erection of a house.

2. Can you give any examples additional to those of § 20 showing that knowledge pursued with the object of gain is not generally productive of results useful to mankind at large?

3. Can you give any reason why the owner of land should have the exclusive use of any water-power which may be obtained from a stream flowing through his premises?

4. What food is necessarily consumed in the production of a coat?

5. If a farmer is induced to invest in a steam-plough, what will be the debit and credit side of his account?

6. In what cases should we regard a carriage as capital, and in what cases as sustenance?

7. When we speak of a negative capitalist, is it the capital itself or his property in capital which is negative?

8. To what extent should a theatre be regarded as capital? If you regard it as capital with respect to the owner, but not as capital with respect to the country at large, then who are the negative capitalists and what is the interest which they pay on that negative capital? (Note that the essential mark of a negative capitalist is that he is paying interest on some fund which he is not using as capital, but is enjoying as sustenance.)

9. Show that the negative capitalist must pay interest instead of receiving it. Is every one who pays interest necessarily a negative capitalist to that extent? If so, give as many examples as you can of negative capitalists.

How is it with a man who borrows money to expend in stocking his farm? Is his capital positive, negative, or zero?

10. If we should compare the population of New York and of Switzerland with respect to the ratio of the laboring units to the total population, would you expect the ratio to be nearly the same in the two countries? In which country would you consider it to be the greater? How would the ratio in this country a century ago compare with the present ratio?

11. Can a national loan add to the capital of a country?

12. "If there are human beings capable of work, and food to feed them, they may always be employed in producing something." Can they necessarily produce the equivalent of the food they consume? If not *necessarily*, under what conditions can they? Take, as a starting-point, the state of things if the fixed capital of a country were all destroyed, but the sustenance all preserved.

13. Is there any inherent necessity that wealth should be consumed in order to perform the functions of capital—e.g., if a machine could be made which would run forever without wear, would it lack any essential property of capital?

14. In 1871 a large part of the city of Chicago was destroyed by fire. Could the people of the city have rebuilt it without outside help? If not, point out the nature of the help rendered from outside.

15. Point out the influence of steam-transportation upon the ratio of the urban to the rural population.

16. How does the modern system of production by large organizations operate upon the shiftless class who will never stick to a regular line of work? Show why, when this class really wants to work, it is harder to get it than it would be in a primitive community.

17. Do fidelity and reliability on the part of the common laborer become more or less necessary with the progress of society?

18. What reasons can you give for considering that, other conditions being equal, that country is best off in which the ratio of the laboring units to the whole population is the least? Granting the relation, which term is cause and which effect? That is, is the country well off in consequence of the small number of laboring units, or is this number small because of the prosperity?

19. To what extent is a contractor engaged in building houses a laborer, and to what extend a capitalist? What form does his capital take? Is it necessary that he should have any capital at all, and if so, why?

20. Enumerate so far as you are able the various classes of men who receive wages in the widest economic sense. If you begin with those highest in rank, who would come first?

21. Enumerate, so far as you are able, those classes of persons working for hire whom you would put into Walker's third class, and those whom you would put into the fourth class.

22. Can you see any difficulties in the way of abolishing all wages by time and paying laborers by the piece? If so, enumerate them.

23. If the organization of labor described in § 36 were carried to the highest degree, describe the result so far as you are able.

24. Can you explain why the co operative system, under which the operatives dispense with master-workmen and managers to run the factory, and make the shoes themselves, and thus get the whole price, has not been more successful?

25. Define what portion of the price paid for a coat goes to compensate the friction of exchange.

26. Explain as well as you can in what manner the checks upon the increase of population will act when the population begins to encroach upon the means of subsistence.

27. What is the effect of encroachment on the means of subsistence upon the efficiency of labor (§ 41)?

28. Does the proportion of the population engaged in intellectual pursuits tend to increase or diminish with the increase of wealth?

29. How do you reconcile the rapid growth of population in civilized countries during the present century with the Malthusian theory?

30. Is there any method of calculation by which we can approximate to the total population which the earth can sustain? If so, state the method, and show what data are necessary to apply it.

31. Has cheap transportation of passengers and goods across the ocean tended to retard or to stimulate emigration?

Division C.—The Mechanism of Exchange.

CHAPTER XI.

OF MONEY.

62. The necessity of exchange arises from the division of labor. If there were no such division, then every man would make all things necessary for human wants, and hence might supply all his own wants. He would then not need to exchange with other persons. But, in the actual state of society, each producer generally makes a large quantity of some one commodity, and in order to supply his wants he must exchange this commodity for a great number of other commodities.

We have already defined two possible systems on which this exchange might be effected, the one barter, the other sale. By the method of barter the exchange of one quantity for another would be made by a mutual transfer of the ownership of the commodities exchanged. We have shown how impossible such a system would be in civilized society, and how by the introduction of a common medium of exchange, called *money*, the difficulties in the way of barter are avoided.

But to understand correctly the theory of exchange it must be remembered that its ultimate result is, after all, *barter*, in that commodities are ultimately exchanged for commodities. To show this, let us suppose the owner of a pair of shoes to sell them, and with the money to buy a barrel of flour. In doing this he has made two exchanges, selling the shoes for the money and buying the flour with the money. But so far as he is concerned, all he has done and all he wanted to do is to exchange his shoes for the flour. The money was only an intermediate

agent which enabled him to effect this exchange. This is why money is called the medium of exchange.

The function of money in leading to what is equivalent to barter, and the nature of the exchanges which are actually made in the social organism, can be most clearly apprehended by referring to the communistic view of the operations of the organism which has been set forth in Chapter IX.

We there introduced the conception of each producer bringing his product to a central point, and depositing it in a common stock for the benefit of other men. In return for this he is permitted to take from the common stock such equivalent of the products of other men as he desires. We have shown how difficult and complex would be the problem of deciding how much of any commodity he should be allowed to take from the common stock in exchange for what he brought into it. By the use of money this requirement is fulfilled in a wonderful manner, and the most complex problem which could be presented to the central authority is solved at once without serious trouble to anybody. The benefit conferred by bringing wealth in and the evil caused by withdrawing it are measured by the money received and paid. For example, considering a shoemaker in his relations to society at large, that is, to all other individuals of the community, we see that when he sells a pair of shoes he puts them into the common stock for the benefit of other people. The measure of this benefit was the money that he received for them, and the possession of this money was his certificate that he had rendered the benefit. When he bought flour with the money he surrendered this certificate and took a barrel of flour from the common stock. His right to draw from the common stock on account of his shoes then terminated. In consideration of giving other people a pair of shoes other people gave him a barrel of flour.

Our next questions will be what commodities can be used as money; and what requirements these commodities must fulfil in order to perform the functions of money in the most advantageous manner.

63. *Requirements of the Medium of Exchange.* From what has already been said we see that all civilized communities are in need of some common commodity called *money* for which all other commodities shall be exchanged. We also call to mind that exchange consists in a mutual transfer of ownership, the ownership of the goods passing from the seller to the buyer, and that of the money in the reverse direction. We have now to examine what requirements money should fulfil.

FIRST REQUIREMENT. *It must have value.* To see the reason for this requirement, let us take the case of a man who agrees to work one month for the sum of $30. If his employer could agree beforehand that this $30 should purchase for him a certain amount of clothing, flour, and other necessaries, it would make little difference to him whether it had or had not value. But no such guarantee is possible. The employé can buy with his money only as much as it has the power to command from the dealer, the shoemaker, the grocer, and the other persons who are to supply his needs. Moreover, the commodities he can thus buy measure what his money is really worth to him. Let us suppose that he wants to have a pair of shoes made. It is very clear that if the shoemaker can get money without going to the trouble of making shoes, he is not going to make shoes for the laborer for the sake of the money. The same is true of every one who supplies the laborer's wants. Hence it is clear, if the latter is not to be deceived, that the money which he receives must be something which the grocer, the shoemaker, and the tailor cannot get except by working for it as he himself does. It must also be desired by them, because of course they will not work for what they do not desire.

Thus three necessary qualities of money are (1) that it must be desirable, (2) limited in supply, and (3) incapable of being commanded except by labor. These elements, as we shall hereafter see, determine *value*. The somewhat vague yet excellent term *purchasing power* is applied to the power possessed by money to command commodities. We may then say

that the purchasing power of money is the measure of its value to the person who possesses it.

Secondly. *The value of money must be definite and permanent.* If the commodity used as money is something of which either the desirability or the quantity at hand fluctuates widely from week to week, then the seller, laborer, or other receiver of money can never know beforehand what quantity of the necessaries of life the money which he is getting will purchase for him. It may possibly be weeks, months, or years before he will want to expend the money for the necessaries of life; but he wants a reasonable assurance that when he does expend it it will buy as much as it would when he gets it. This constancy of purchasing power implies constancy of value, and therefore a general constancy in the conditions of supply.

Thirdly. *Money must possess durability.* If it is liable to wear out or deteriorate as it passes from hand to hand, it speedily disappears and no person could with safety keep it for a long time. To avoid this difficulty it must be something which is as durable as possible.

Fourthly. *It must admit of convenient subdivision.* Of the vast multitude of commodities or services necessary to supply human wants, some have to be bought in small and others in large quantities. Thus payments of various amounts have to be made, which cannot be done unless the money by which they are made can be divided up to any extent.

Fifthly. *It must be something which can readily be transported from place to place, and thus be at convenient command of the owner.* This needs neither illustration nor proof.

64. The commodities which most nearly fulfil all the preceding conditions are the precious metals, gold and silver. These metals have therefore long formed the universal medium of exchange among civilized nations, with some exceptions which will be considered from time to time. Yet it cannot be claimed that they absolutely fulfil any of the above requirements. All we can say is that they come nearer to the fulfil-

ment than any other commodities with which we are acquainted.

Other commodities have been temporarily used by people who could not readily command the precious metals. Among tribes engaged principally in the chase, furs and skins have been employed as money. These formed the medium of exchange between the Hudson Bay Company and the Indians. Among pastoral tribes sheep and cattle have frequently been used. In the early history of the American colonists wampum was the medium of exchange with the Indian tribes. When the metals have come into use, it is not always gold or silver that is first employed. Platinum coins were once in use in Russia. The smallest coins of Europe are made of copper, although it is gradually giving way to the alloys of nickel, out of which our small coins are made. We might not inappropriately include in this class an irregular kind of money, the paper notes sometimes issued by governments in dire distress. But although these notes are intended for use as money, they generally purport to be promises to pay money, and not the money itself. It will hereafter be shown how and under what conditions such promises can take the place and fulfil the functions of money.

65. *Methods in which the Precious Metals are utilized as Money.* When one sells a commodity, it is essential that he shall know how much money he is getting in exchange; hence arises the necessity of measuring money. In the early stages of society the money is measured by its *weight;* men sell for so many pounds or ounces of gold or silver. This seems to have been the case in ancient times. We read of the pieces of silver with which Abraham bought land. So, after the gold discoveries in California, payments were made in mining communities by weighing gold-dust. But the weighing of all money paid is too troublesome in ordinary transactions, to say nothing of the difficulty of insuring the fineness or purity of the metal. Hence, from an early age of the world's history,

governments have adopted the policy of coining the precious metals into pieces of definite weight. Such pieces of metal are now universally used in domestic transactions. Thus we have certain weights of gold in England, France, and America known respectively as pounds, francs, and dollars.

The way in which money gets into circulation is ordinarily this: When any possessor of gold or silver desires to use it in purchasing commodities he sends it to a mint. The mint is a kind of factory established by the government for purifying the precious metals and making them into coins. At the mint the government makes the gold and silver bullion brought to it into coins, and returns it to the owner in the form of money. Some governments coin all the bullion brought to them free of charge, while others demand a small percentage for the expense of the operation. As a general rule, however, the charge is so small as not to be a very important item in the value of the money.

66. The reason for governments undertaking the coinage of money is that, if the coinage is honestly executed, it affords the best assurance that the coin is what it professes to be. If individuals or corporations were allowed to issue money, the question would be constantly arising whether any particular coin did or did not contain the requisite amount of metal. But when a government coins, the weight and quality of the metal in the coin is fixed by law. Each nation determines for itself what amount of metal shall be contained in a given coin. If we compare the moneys of England, France, and America, we find the fundamental units to be entirely different. The English pound contains nearly as much gold as five American dollars, and one American dollar contains more than five francs. But it is essential that whatever coin is issued under a given name shall be as invariable as possible from generation to generation. Otherwise we have changes in the meaning of the word "pound," "dollar," or "franc," which would be intolerable.

When a government undertakes to coin money, its first step is to prescribe how much gold or silver shall be put into a coin, and to give that coin a name. The name should then indicate the quantity of the metal of which the coin consists. Some economists have objected to giving special names to the coins, because these names impress the ignorant public with the idea that some element of value resides in the name itself. For example, all ignorant people who do not possess unusually good sense think that a dollar has some peculiar element of value which does not reside in twenty-six grains of ordinary gold. Hence it might have been better to designate coins simply by their weight, as so many grains or grams of gold or silver. But it is questionable whether the superstition would have been done away with by any system of naming. The English pound was not originally the name of the coin, but meant a pound of silver. But this did not prevent more than one king from making a coin which contained less than a pound of silver and calling it a pound. At the present time no one ever thinks of any relation between the pound sterling and the pound weight.

67. *Legal-tender Quality of Money.* As a general rule the great body of the coined money of each nation is a legal tender for all payments made under its laws. It is very essential to clearly understand how the necessity of making money legal tender arises. It arises because men must have some common understanding as to what shall be meant when one person agrees to pay another a specified sum of money. We can readily imagine that if there were no such understanding, disputes might arise as to what sort of dollars or cents or currency a party had agreed to pay. Such disputes would be especially liable to arise when, as is always the case, substitutes for the precious metals are used as money. They are avoided by a legal provision that when a person agrees to pay a sum of money within the jurisdiction of any country, the agreement shall be construed to refer to the coin issued from the estab-

lished mints of that country. Money with which this right is associated is called *a legal tender*.

The legal tender of a given kind of coin may be limited or unlimited. It is *limited* when the legal understanding is that payments can be made by it only to a certain amount; *unlimited* when there is no such legal understanding. Some of our small silver coins, for example, are a legal tender to the amount of $1, and others to the amount of $5 or $10. The largest and most important coins are a legal tender to any amount. The effect of the limit is this: No creditor is compelled to accept payment and give the debtor a release if the coin is not a legal tender to the amount of the debt, but may require payment in coin which is a tender to the full amount.

The power of making particular kinds of money a legal tender is so easily abused that its nature and effect should be well understood. When properly used it has no other effect than that of establishing the meaning of words. As it is necessary that there should be a common understanding as to what shall be meant by "one foot," "one acre," or "one gallon," so a similar understanding is necessary as to the meaning of "one dollar." As the law prescribes that "one pound" shall mean a particular weight, so it prescribes that the word "one dollar" shall mean a certain coin issued from some United States mint. During the Civil War, however, Congress went farther and enacted that certain paper notes issued by the government should be a legal tender. This was changing the meaning of words, because the word *dollar*, which before meant a piece of gold, now meant a piece of paper. Had this change applied only to agreements made after the law was enacted, it would not have been morally wrong. But some courts decided that it should apply to all previous contracts, in one case even to an expressed contract for the payment of gold coin. This decision was as wrong as if Congress had changed the size of the bushel measure and the courts had decided that old contracts for the delivery of wheat must be made in the new measure, and not in that understood by the parties when they made the contract.

68. ***The Monometallic and Bimetallic Systems.*** In some cases only one of the precious metals is made into coins of unlimited tender. Thus in England and Germany all large payments can be required by the creditor to be made in gold coin. Among oriental nations, especially India, China, and Japan, silver has very generally been the only unlimited legal money.

The system of making but one of the precious metals an unlimited tender is called *monometallism.*

The system of making both gold and silver coins an unlimited tender under the same jurisdiction is called *bimetallism.*

Under the bimetallic system the debtor has the right to make his payment at choice in either of the two precious metals, no matter how great the amount may be. This system prevails with some modification among most European nations except England and Germany, but with certain limitations which will hereafter be discussed. In the United States sometimes one and sometimes the other system has prevailed. At the present time we have a modified form of bimetallism, which will be described subsequently.

The system of pure, or unlimited, bimetallism is as follows: The government first assumes that the values of equal weights of the two precious metals have a certain fixed ratio to each other. During the first seventy years of the present century the value of an ounce of gold in the markets of the world was generally nearly equal to that of 15½ ounces of silver. Only on rare occasions did it fall below 15 or rise above 16. Hence France chose 15½ as her ratio. Since 1834 the ratio adopted by the United States has been 16. The number thus established is called the *monetary ratio.*

It must be understood that this does not mean the actual ratio in the markets of the world, but is an arbitrary number, chosen by the legislative authorities so as to be as near as possible to what they supposed would be the market ratio.

Having fixed the ratio, and prescribed the weight of pure metal in each coin in accordance with it, the mint coins all the bullion of either metal brought to it into coins of unlimited

legal tender. At the present time the United States gold dollar contains 23.22 grains of pure gold, while the silver one contains 371.25 grains of pure silver. The coins, however, also contain ten per cent of alloy, so that the actual weights are:

The gold dollar..... 25.8 grains.
The silver dollar.....412.5 grains.

The three essential features of unlimited bimetallism are:

I. That the law recognizes no difference between the values of its gold and silver coins.

II. The mint must coin into dollars all of each kind of metal which is brought to it.

III. Each metal being an unlimited tender, a debtor may pay his debt in the one he chooses.

Difficulties have been found in making a scheme involving all these features work satisfactorily. Hence they have been modified in various ways.

69. *Limited Bimetallism.* Between the years 1873 and 1878 the ratio of the market value of gold to that of silver took an extraordinary rise, and has for several years past not differed much on the average from 18. The result has been to throw the monetary systems of those nations practising bimetallism into confusion. The system temporarily adopted by these nations is that of restricting the coinage of silver, while placing no limit upon that of gold. This restriction applies only to the quantity coined, and not to the legal-tender quality of the silver coins. That is, a debtor can pay a debt of any amount in silver coins if he can find them, but the mint will not coin them for him. At present the mints of the United States are required to coin not less than two millions nor more than four millions of silver dollars monthly. But, for reasons which cannot be well understood at present, the government does not coin these dollars for the owners of the bullion, but buys the bullion, coins it on its own account, and pays these coins out to the public creditors.

At the time of sending this book to press the whole question of coinage throughout the world is in an uncertain and confused state, owing principally to the extraordinary change in the relative market values of gold and silver which has just been described, and owing also to the increasing amount of money needed to transact the great volume of business to which modern production has given rise. The desirableness of an international system of coinage is widely recognized, but the people of no one nation are fully agreed as to what is the best system even for themselves, and of course an international arrangement involves yet greater difficulties.

70. *Subsidiary Coinage.* The system of monometallism does not imply that gold coin alone shall be used, but only that no other coin shall be an unlimited tender. Small payments must always be made in coins of other substances, because gold coins of small value would be so minute as to be liable to loss. Hence all governments issue coins of small value, which are made a limited legal tender, and are called *subsidiary coins.* The metals most used in these subsidiary coins are silver, nickel, and copper. To prevent them from being melted down as bullion, they contain less than their nominal value of metal. Thus our silver quarter dollar weighs only 96 grains instead of 103 grains, which last would be one fourth the weight of the silver dollar.

If the coinage of this subsidiary money were free, like that of gold, every one who got his silver coined into quarter dollars would receive in coined money a greater nominal value than that of the bullion from which the coin was made. Hence the practice is similar to that adopted in the case of our silver dollar: the government buys the silver bullion for its small coins, makes them into coins of the prescribed denominations, and offers these coins in exchange for those of unlimited legal tender at their face values. The result is that the public take what are wanted for small payments, and no more.

71. *Volume of the Currency.* By *currency* is ordinarily meant money or some substitute for money in actual circulation from hand to hand. One of the most important mathematical conceptions which enter into economics is that of the total volume of the currency. We may reach it in various ways which are nearly equivalent to each other. Assuming, as we may, that the quantity of coin more than fifty years old actually in circulation is insignificant in amount, we may add up the value of all the coins issued from the United States mint during the last half-century. We shall thus have a sum total from which all the coined money now in circulation must have come. If we subtract from this sum total all the coin that has been melted down, all that is now in foreign countries, and all that is lying idle in the vaults of the banks or of the Treasury, we shall have a balance showing the coin in circulation. This balance is the volume of the currency so far as coin is concerned.

But we may commence at the other end of the line by considering the money which is in every man's pocket. If we could at midnight on any day demand and obtain from every individual and corporation in the country a statement of the amount of coin money in actual possession of such person, we should have a definite sum total. It is evident that this sum total would change very slowly from day to day, and even from year to year. The only effect of payments would be that one man would have a great deal more and another man a great deal less on different days. Only when money was melted down, sent out of the country, or stored away in vaults, or as new coin was issued, would there be changes in the sum total.

CHAPTER XII.

BANKS AND CREDIT-MONEY.

72. We suppose the reader to have clearly in mind what has been said in §§ 4–6 on the relation of wealth to its owner. When we study the operations of business we see that although in most cases the wealth one possesses is a definite existing object, such as a house, a table, or a field of wheat, yet in other cases the wealth is not definite. For example, I agree with a cabinet-maker that he shall make me a table and deliver it next week. I may then consider myself in a certain sense the owner of that table, although it has no existence and may possibly never come into existence. Again, in the sale of commodities in the market, it rarely happens that payment is made at the time of the sale. In this case what the seller receives for his commodity is not money, but the right to demand money at some future time. But he considers himself the owner of that much money as completely as if he had it in his safe, and, for economic purposes, we may consider this imaginary money, which he is to get at some future time, as a part of his wealth. Legally, however, the creditor is considered, not as the owner of wealth, but as the possessor of a right, namely, the right to demand from his debtor the payment of the money, and to enforce this payment by legal measures. This right to require the payment of money from another person is called **credit.**

To prevent confusion we must carefully distinguish this meaning of the word credit from the analogous and common meaning of good business standing. When we say, "That man's credit is good," we use the word in a different sense from the economic one. In the latter sense a man's credits are

simply the sum total of the moneys which others owe to him, and have nothing to do with his character or standing.

Transfer of Credit. A creditor may transfer his rights to other legal persons on the same principles by which he transfers the ownership of wealth. The transferee then takes his place as the possessor of the right in the way pointed out in II. 9. The methods and forms of transfer vary with the nature of the credit. Commonly, any piece of writing clearly indicating the transfer of the right, and duly signed by the party transferring, is sufficient.

73. *How Banks Arise.* In a primitive state of society every payment of money is made by the payer actually delivering the money into the hands of the payee. In modern mercantile operations this transaction would involve a heavy tax upon the resources of the community Large sums in possession of the owner would be in danger of being lost, stolen, or burnt. Serious danger of loss and theft would be incurred in the transportation of money from the office of the payer to that of the payee. Doubts and disputes about the amount actually paid, or the amounts in the possession of individuals, would frequently arise.

A little consideration will show us that in most payments the delivery of the money is not necessary. Since only the ownership of the money is changed by the payment, and since, as a general rule, the payee only wants the ownership in order that he may transfer it to some other person, it follows that all the requirements of exchange will be fulfilled if the money is stored where he can get possession of it in case he wants it, provided a system of transferring the ownership can be devised. Thus, all the inhabitants in a town may keep their money deposited in some one place, and make payments by transfers of ownership in such form as might be mutually agreed upon. Such is the basis of the banking system now prevalent in all civilized communities.

A **bank** may be defined as primarily a place in which

money is deposited for safe-keeping. It has, indeed, more complicated functions, but they will be best understood by starting from this first and most simple function of all. Let us then begin by considering the case of a town the inhabitants of which deposit all their money for safe-keeping in a single bank, and make all payments among themselves by transferring the ownership of the money. Such an institution is called a *bank of deposit*, and the moneys in it are called *deposits*. It is obvious that the total amount of deposits at any time would be the sum total of all the moneys owned by each individual of the community at that time. It would therefore represent the volume of the currency so far as the town was concerned (§ 71).

74. *Bank Deposits and Cheques.* From what has been said of the dual character of financial transactions and obligations, it will be seen that the deposits appear to the managers of the bank under two aspects.

I. *As liabilities or obligations of the bank.* By this is meant the obligation of the bank to pay to each or any depositor the amount of his deposit whenever required. Of course the sum total of liabilities is in this case equal to the sum total of the deposits.

II. *As resources of the bank.* The resources would in this case be the coin in possession of the bank, and would constitute the fund which enables the bank to satisfy its liabilities. So long as the bank engaged in no other transactions than those which we have described, the resources and liabilities would remain equal. Of course there is no physical necessity for this equality, since the coin might be stolen without lessening the liability of the bank. But the balance can always be produced by suitably accounting for any deficiency, so long as the accounts of the bank are kept in order.

A statement of the condition of the bank at the close of business on any one day would then be in a form like the following:

Resources.		Liabilities.	
Cash in vaults (coin).....	$25,000	John B. Smith, Creditor....	$500
		William Jones.....	1,250
		Samuel Rhett.....	850
		Etc., etc., etc.	....
		Total liabilities (deposits)..	$25,000

75. *Cheques.* The ownership of money in a bank is transferred by an instrument in writing called a *cheque.* The *drawer* of the cheque is an owner of money deposited who wishes to transfer that ownership to another person. The *drawee* is the person to whom the transfer is made. The usual form of a cheque is the following:

New York, June 20, 1865.

Exchange National Bank,

Pay to Samuel Rhett [*drawee*] or order

($910) Nine hundred and ten dollars.

William Jones [*drawer*].

By this instrument $910 of the right of William Jones to his deposit in the bank is transferred to Samuel Rhett, whose right is increased by the same amount. When Rhett presents the cheque at the bank his credit is increased, and Jones's is diminished by this amount. Thus the cheque appears in its dual aspect as an increase of one man's credit and a diminution of another's, which cancel each other, leaving the sum total at $25,000 as before.

76. *Transfer of Cheques.* By long-established mercantile usage the drawee may transfer the right given him by the cheque to any other person, this person to another, and so on indefinitely, by suitable indorsements on the back of the cheque. This right is expressed by the words "*or order,*" which mean *his order or that of any party whom he may designate.* Thus the ownership may pass from hand to hand like that of money

77. *Individual Accounts.* If to the total deposits of any customer last night be added all the cheques in his favor which he has deposited to-day, and from the sum be subtracted the cheques he has drawn to-day, the remainder will be his deposit to-night; that is, it will express his share of the money held by the bank. In mercantile usage the subtractive quantity is transferred to the other side of the equation, which thus becomes credit yesterday *plus* cheques since deposited *equals* cheques drawn *plus* credit to-night. Thus the amount may be balanced every day.

Variations of Sum Total of Deposits. In the case so far supposed, so long as no party in town made payments to parties outside, or received payments from parties outside, the total amount of the deposits would remain unchanged. The only varying quantities would be the individual amounts owned by each depositor; and the additions would in all cases balance the diminutions. But when a depositor had to make a payment abroad, he would have to withdraw his money for that purpose. Thus the sum total would be diminished by all payments made by the townspeople to persons outside. When a depositor receives money from parties outside he deposits it in the bank, and the sum total is then increased by the amount so received. Thus the sum total would fluctuate according as the payments in one direction or the other were in excess, and the state of the bank from day to day would be the index of the balance of trade of the town with the world outside.

78. *Capital of the Bank.* That perfect solvency which has just been described would depend on the bank's meeting with no losses. Since all mercantile transactions are now and then liable to loss, it is necessary that the bank, in order perfectly to secure the depositors whose money is loaned, should have a guarantee capital. This capital is a fund subscribed or paid in by the stockholders of the bank, who thus become the owners of its rights. The capital thus paid in appears again on both sides of the statements of the bank.

As a *liability* it expresses the sum which, in case the bank stopped business, it would have to return to its individual stockholders. As a *resource* it is expressed by this additional amount of cash in the vaults of the bank. If a capital of $15,000 were paid in to our supposed bank, its statement would then appear in the following form:

Resources.		Liabilities.	
Cash in vault.....	$40,000	Due depositors.....	$25,000
		Capital stock.....	15,000
			$40,000

This statement means simply that out of $40,000 cash in the vaults, $25,000 belongs to depositors, and $15,000 to the stockholders.

79. *Discount Functions of the Bank.* The cost of managing such a bank as we have described would have to be paid by its customers, since we have assigned it no business by which it could make a profit. Having in its possession all the coin owned by the town, the bank would find a certain sum lying idle in its vaults from year to year and from generation to generation. For although, as we have just shown, the sum of the deposits would fluctuate according to the state of trade with the outside community, yet in practice these fluctuations would be slight. Although the individual may and often does pay out all the money he has got, the community at large never does. If the average amounts of deposits were, as we have supposed, $25,000, it might be found that they occasionally went as high as $30,000, and might perhaps from time to time fall as low as $20,000. Of course no numerical rule for the limits can be set in practice. But the actual fluctuations are found to be of this order of magnitude. Thus the sum idle forever in the vaults of the bank might be fixed at $20,000 plus the capital, making $35,000 in all. Now the bank could loan this money out at interest without any danger of its being unable to fulfil its engagements; and this for two reasons:

in the first place, as business goes, it would not be called upon by the depositors of the money loaned to pay it; and in the second place, if it ever should be called upon, it could get the money by demanding payment from the borrowers. Hence so long as the loans were well secured the solvency of the bank would be unimpaired.

The result of this policy would be, that instead of the institution being a *custodian* of money, it would become a *borrower*, bound to repay the money on demand, but at liberty to loan it out as long as the depositor does not demand it. The deposit then becomes a credit simply, and the depositor, instead of being the *owner of money*, is the *possessor of a right*, namely, the right to require money from the bank and enforce its payment.

Now, by the hypothesis just made, suppose that there is in the vaults of the bank a cash sum of $20,000, which lies there unused year after year and generation after generation, and an additional sum of $15,000 paid in by the stockholders. This makes a sum of $35,000 which the bank can loan out at interest without any danger of being unable to meet its obligations on demand. Then all residents of the town who want to borrow money can go to the bank and secure loans until the whole $35,000 is thus borrowed. For each sum borrowed the borrower gives his promissory note, which in banking practice is usually payable in one, two, or three months.

The very same reason which originally prompted the depositors to place their money in the bank will now prompt the borrowers to deposit their loans, and to make such transfers as they desire by cheques upon the bank. When these loans are all effected, and the deposits made, the state of the bank is as follows:

The amount of cash in the vaults remains the same as before, $40,000, since all borrowed has been re-deposited.

The amount due depositors is increased by $40,000, which they have borrowed and immediately deposited.

This amount is balanced by $40,000 in promissory notes from the borrowers, payable in one, two, or three months.

The promissory notes represent moneys collectible by the bank and applicable to the liquidation of its liabilities. Hence the statement of the bank will now be as follows:

Resources.		Liabilities.	
Cash in vaults.....	$40,000	Capital stock.....	$15,000
Prom. notes (discounts)....	35,000	Due depositors.....	60,000
Total resources.....	$75,000	Total liabilities.....	$75,000

This means that of the cash on hand and debts due, amounting in all to $75,000, $15,000 belongs to the stockholders and $60,000 is due depositors.

80. We now have a state of things which may almost seem paradoxical, and which is a frequent source of confusion to those not familiar with business. The inhabitants of the town consider that they have altogether $60,000 in money in bank, and yet there exists only $40,000 in money all told. They are therefore, in a certain sense, the possessors of money which has no real existence. There is, however, nothing more confusing in this than that a man should be the owner of a table which is not yet made, but which the maker has agreed to finish and deliver next week, or that he should be the owner of a house which a contractor has agreed to build. In fact he is not the owner of money, but the possessor of credit, which, as already explained, is merely a debt from the bank. But this credit serves all the purposes of money, and may be used in making exchanges, exactly as if it were gold and silver.

Since each depositor counts himself the possessor of so much money in the bank, it follows that the total volume of the currency is now $60,000. We therefore reach the conclusion that the volume of currency in circulation may include not only material money, but credit, expressed by nothing more than figures written in the books of a bank. In other words, when a customer goes to a bank, gives his promissory note for $1000,

and has the figures $1000 written on the credit side of his account, thereby giving him the right to draw cheques for that amount, an addition of $1000 is made to the total volume of the effective currency. By *effective* currency we mean that which can be used in payment.

Since all the money borrowed has been deposited, there still remains the same amount in cash in the vaults of the bank. But this amount will fluctuate yet more than before, owing to the number of persons who may make or receive payments to or from the rest of the world. Still it would probably be found that the amount would never fall below $30,000. This sum could again be loaned out to customers, and if they deposited it, it could be loaned again, and so on indefinitely. Thus we cannot set any mathematical limit to the volume of the credit currency which the bank may have in circulation through the cash in its vaults. But with every increase in this volume there would be an increase in the fluctuations arising from trade, so that a limit of safety would be soon reached. The national banking law of the United States sets the limit at 25 per cent of the current liabilities, but of course the bank must seek to keep its cash a little above that limit. In the case supposed, when the bank had approached the safe limit to the amount of its loans, its statement would be in this form:

Resources.		Liabilities.	
Cash in vaults.....	$40,000	Capital stock.....	$15,000
Prom. notes (discounts)....	120,000	Due depositors.....	145,000
Total resources.....	$160,000	Total liabilities.....	$160,000

81. *Bank Circulation.* It often happens that the depositor or borrower desires to make payment without the formality of drawing and signing a cheque. The bank may then, in making him a loan, issue its own promissory note, payable on demand. Thus arises the familiar *bank-note*. This transaction will consist in the simple exchange of credit between the individual and the bank. The individual gives the bank his

promissory note, payable with interest at some future time, and in return receives from the bank its own promissory note, payable on demand without interest. If now we suppose our bank to issue notes in this way to the sum of $10,000, its statement will be as follows:

Resources.		Liabilities.	
Cash in vaults.....	$40,000	Capital stock.....	$15,000
Prom. notes (discounts)....	130,000	Due depositors.....	145,000
		Circulation	10,000
Total resources.....	$170,000	Total liabilities.....	$170,000

At this point we may notice one of those singular mistakes which frequently influence the views and actions of masses of men, although in direct conflict with facts which would be well known would men only attend to them. This error is the belief that the main function of a bank is to issue circulating notes. It may be questioned whether this function should be considered a legitimate one of any bank, and as a matter of fact the large majority of the banking firms of the world do not issue such notes. Public or incorporated banks generally, but not universally, issue them. We shall hereafter see reason to believe that if no such thing as a bank-note for general circulation had ever been thought of, the world would not have been any worse off.

82. *Ulterior Development of the Bank.* The transactions which we have described complete those which necessarily pertain to the business of conducting the bank. In practice, however, there is yet further development in various ways. In the first place, instead of all the business men of the town keeping their money in one bank, there are frequently a great number of banks. The result is that when a payment is made by cheque it will happen in a large majority of cases that the payee does not himself keep an account in the bank on which the cheque is drawn, but in some other bank. Then, instead of sending himself to the bank to get his cheque cashed, he

hands it to his own bank, authorizing the latter to collect it by indorsing his name on the back. The result is that in the course of the day the various banks of the city will have a collection of cheques drawn against each other.

Now if we take the sum total of all the cash in the banks of the city, it will remain true (leaving out the exceptional cases where parties withdraw cash to make payments) that the sum total will vary only in consequence of payments to parties outside the city. But when the cheques drawn upon each other are presented, each bank is obliged to pay in cash all drawn upon itself, and has the right to collect in cash all held for payment by other banks. The cash in the vaults of any one bank will then increase or diminish according as the cheques deposited with it are in excess of or below those drawn upon it. Still, as business ordinarily goes, it will frequently happen that these amounts closely balance each other.

As business goes on, the accounts of the resources and liabilities of the bank become more complex. The statement can be balanced at any time by calculating the conditions if the bank should at that moment wind up all its business and dissolve. Its resources would then consist of all the property which it possessed and all the debts due to it, in whatever shapes they might be. Ideally we conceive that this whole sum is put into cash. The liabilities would then consist essentially of the statement what would be done with this cash. In the first place, the depositors and holders of notes would all have to be paid off. Then other creditors would have to be paid, the capital stock would have to be made good, and the balance would be divisible *pro rata* among the stockholders as accrued profits. It must also be remembered that, in the statements published by the banks, the cash on hand and debts due are divided up under a number of separate heads, instead of being combined into one sum total. These little details are, however, of slight economic importance, and all that is essential for the student is to understand the nature of the large amounts which pertain to the conduct of the business.

CHAPTER XIII.

ORGANIZATION OF BANKS IN DETAIL.

83. The system of banking, as described in the preceding chapter, is subject to a weakness dealing with which is the most intricate problem connected with the subject. The source of weakness is this: the bank, in order to make any profit, must always have upon its books credits payable on demand (that is, deposits and circulating notes) to an amount greater than it has the cash on hand to pay with. The result is that if everybody having money in the bank should demand immediate payment, the bank could not fulfil its obligations, and would be obliged to postpone payment and suspend business. But this suspension would not imply any lack of ability to make good its obligations in the course of time. Excluding such abnormal cases as those arising from defalcation, robbery, bad debts, etc., every bank has on hand not only cash, but the promissory notes of its customers; and these two items, as already shown, must, in the normal case, equal or exceed the deposits and capital combined. A well-conducted bank has generally a large reserve fund in addition to what would make good its capital and deposits.

Let us see the consequences of a continued demand upon a bank for the payment of its debts, called in common language a "run." Suppose the run to be upon the bank whose condition is described in § 81. It has on deposit or in circulation the sum of $155,000; that is to say, it has credit to this amount circulating as money through the medium of cheques and notes, and forming this amount of the currency of the community. Suppose now that the owners of this whole $155,000 come day after day to demand payment, while no others deposit money in their places. The bank having cash to the

amount of $40,000 can redeem this amount of its indebtedness. But there will still be $115,000 outstanding. In order to meet this indebtedness it must refuse to discount any more notes, and must require the payment of all those which it holds, as fast as they become due. As the payments come in they can be applied to the redemption of the indebtedness until the whole $115,000 remaining is paid. This will still leave $15,000 out of the $130,000 of notes discounted, and this money will belong to the stockholders as capital. The final result of the run will be as follows:

I. A diminution of $115,000 in the volume of the currency circulating in the community. Instead of $145,000 in bank credits and $10,000 in bank-notes, there is now circulating $40,000 in coin, just as if the bank had never been organized.

II. The bank will during a period of several months have been obliged to refuse to loan any money to its customers, and thus many of the latter, failing of their expected loans, will be unable to pay their debts.

These two evils will tend to aggravate each other, since, owing to the diminution in the volume of the currency, not only the ability of the merchants to borrow from the banks, but to borrow from other people, will be diminished. So long as a man has a considerable deposit in the bank he is in a much better position to loan money than when he has only a small quantity of coin on hand. The general result will be what is called a "commercial panic," or a general inability on the part of large numbers of the community to pay their debts.

But this, be it remembered, results, not from any inherent necessity of the case, but because the customers of the bank, either from loss of confidence or from any other reason whatever, have determined to withdraw their balances. So long as general confidence is felt in the bank there is no danger of a run upon it. The state of mind of the ordinary depositor has been facetiously expressed in the form: "If you can pay me my money, I do not want it; but if you cannot pay me, then I must have it." The reason why a general run upon banks is

never to be feared under ordinary conditions is that there can be no occasion for it. The depositor can generally make his ordinary payments in his own community by cheque as easily as by money; and even if he must withdraw his money to make the payment, the chances are that the payee will re-deposit it in the same bank or in some other bank. The exceptional cases arise when he is to make a payment in some other place, or when he wants the gold or silver coin to use for some other purpose than paying it out.

The reader must, however, be on his guard against the popular illusion that these exceptional cases can never arise except from distrust of the bank. Such would indeed be the case if no one ever wanted money except to pay out within the sphere of operations of the bank. But experience shows that if banks act on this supposition by increasing their credits, their depositors will come demanding coin for foreign export, or to melt down for manufacturing purposes. We shall hereafter see that the facility with which coin can be exported operates like a safety-valve to stop an undue expansion of bank credit. The banks themselves keep each other in check by requiring the prompt payment of all cheques which they hold against each other.

84. On the other hand, there always exists a greater or less tendency towards an increase of the discounts and deposits of a bank. Men of business continually want to borrow money, provided the rate of interest is not too high; they therefore go to the banks for loans. But instead of taking the loans out as cash, they commonly leave them on deposit, and make their payment by cheques. In such cases there is a simple exchange of indebtedness, the bank acknowledging the indebtedness to the customer on demand, while the latter gives his note for the same sum payable with interest at a future time. When business is brisk and merchants see good opportunities for profit by enlarging their operations, they naturally go to their banks for discounts, thus creating a demand for money, or, to

speak more accurately, for bank credits. In order to avoid too great an extension of this credit, the bank raises its rate of interest, thus discouraging the applications of those borrowers who do not expect to make a profit to justify the increased rate. When business is dull the opposite effects take place: the merchants pay off their notes instead of letting them continue at interest, and the bank must lower its rate of interest in order to attract borrowers.

85. Since all the profits which banks can pay their stockholders are derived from the interest on the moneys loaned, and since all the coin in the vaults is so much dead capital drawing no interest, there is a certain tendency on the part of banks to make the largest loans on the smallest available cash reserve. How far this temptation will be yielded to depends upon the good management and soundness of the bank, the general financial state of the community, and the laws which govern banks. In new countries, where the rate of interest is high and the demand for loans great, the temptation is much stronger than elsewhere. Thus arose the "wild-cat banking" which was so prevalent in our new States during their early history. When a "wild-cat" bank was established, its practice was to loan its own notes on interest. The banker knew that there was little immediate danger of these notes coming back in great numbers, because the community was too much in want of them as money. He was therefore tempted to loan them on insufficient security, especially as good security was difficult to obtain under the circumstances. If he could induce his customer to carry the notes to a great distance, the danger of their being returned for payment became still less. So long as people would take his notes, he was thus enabled to draw a high rate of interest on a very small capital. When his notes finally returned for payment, he was frequently obliged to refuse them. To make him pay would cause embarrassment to the business community, and thus his creditors were disposed to deal very gently with him. The result was

throughout our whole western country a great mass of depreciated paper money, issued by banks which those who handled the money really knew nothing about—money which frequently proved worthless, thus causing great loss to the last holders.

86. *Suspension of Specie Payments.* We have described the distress resulting to a community in the case of a general run upon banks, causing a shrinkage of the circulation and an inability of the bank to make loans to those requiring them. To avoid this evil it used to be very common in America for banks to suspend specie payment under such circumstances. Then, when the depositor came for his money, they refused to pay him in cash, but tendered him only a circulating note of their own or some other bank. If he asked the payment of this note, he was told that he must wait. By thus dishonoring its own obligations, the bank was enabled to continue making loans to its customers. In order to do so, it only had to write the appropriate credits on the books of the bank in exchange for the customer's promissory notes. What it loaned him, however, was not money, but rather the hope of money. There was little danger, within moderate limits, of the bank having to pay out large amounts of these notes, because no one had an object in demanding notes which would serve him no better purpose than the credits in his bank-book. The bank in its relation to its depositors was in the position of a debtor who was not obliged to pay out anything but promises to pay, and who could therefore afford to accumulate debts while awaiting the return of better times.

To these defects of the old bank currency we may add the evils arising from counterfeiting. Counterfeit bank-notes were so numerous that the "Bank-note Detector" was almost a necessity in every place where considerable sums of money were paid and received. This Detector was a periodical publication, giving the names of all the incorporated banks in the different States, with descriptions of the genuine notes of each denomination, and of the counterfeits which had got into circulation.

87. *National Banking System of the United States.* The evil thus arising led during the Civil War to the establishment by Congress of the national banking system of the United States. Our account of this system will be confined to its leading economic features. Every such system requires for its operation many legal enactments which do not concern the economist. The latter is principally concerned with the provisions which regulate the credits of the bank, and the funds which it holds to make good such credits. We call to mind that an important part of the circulating medium does not consist of coined money, but of debts payable on demand by the bank, the right to receive which is transferred from hand to hand as if it were money. In order that these debts may be of equal value with coin, the bank is obliged to pay them on demand. They are of two kinds, bank-notes and bank credits. The latter are transferred by simple delivery, as in the case of money. The former are transferred by written cheques as already described. To pay this indebtedness on demand, the bank has two kinds of resources. The one consists of promissory notes of business men, payable with interest at future times, and of other forms of property and of credit. The other resource is coined money. Since, as already shown, the volume of coined money is less than the amount of credit payable on demand, and since the greater the volume of the latter the higher the profit of the bank, it follows that there must be some restrictions upon the power of the bank to increase its credit money and pay out its stock of coin. These restrictions we shall now proceed to consider.

88. Private banks — that is, men or firms who become bankers simply as a matter of private business — are not ordinarily subject to any legal limitations. It may be assumed that no one does business with such a banker unless he is satisfied of his good financial standing and of his business ability and prudence. The interest which the banker feels in his own reputation is a strong incentive to caution, and, in the view of

some, offers better security than any law directing him how to regulate his business can offer.

Private bankers may establish book credits in favor of their customers to any extent, thus performing all the functions of banks of deposit, but they are not allowed to issue circulating notes. Now, although a book credit transferable by cheque is economically of the same nature as the indebtedness expressed by a bank-note, yet the two stand on a very different footing in their relations to the community. Cheques are generally drawn for considerable sums, and are employed for payments only between well-known and responsible men of business. Since every person who draws or indorses a check thereby guarantees its validity, any person receiving it can not only require payment of the bank, but in case the bank does not pay he has the right to require payment of the drawer or of any previous indorser. Hence he has a greater security than that afforded by the solvency of any one individual taken singly.

But in the case of bank-notes this additional security is wanting. When they once get into circulation they will be offered in the course of trade to persons who know nothing about the bank and have no means of assuring themselves that the note is genuine. It therefore seems more necessary that the law shall protect the individual against the danger of being compelled to take a worthless bank-note than that it shall protect him against the danger of a worthless cheque. In the one case he can protect himself, and in the other he cannot.

89. The principle of protection adopted in the national banking system is taken from one previously in force in the State of New York. To see what the principle is, let us once more recur to the relation between the amount of notes which a bank has in circulation and the funds it retains in its vaults to pay those notes whenever required. The bank could be required to keep in its vaults a supply of coin equal to the whole volume of its notes, and to use this coin for no other purpose than the payment of the notes as presented. But it has already

been shown that, were this policy adopted, the bank would have nothing to compensate it for the expense and labor of issuing the notes. Its only source of compensation is the interest gained by loaning the money held in reserve. The problem then is to allow this reserve to be invested in such a way as to yield interest, and at the same time to be available for no other purpose than the payment of the notes in case of necessity.

Our national banking system requires that before issuing notes a bank shall have deposited with the Treasurer of the United States interest-bearing bonds of the United States to an amount not less than $30,000 and not less than one third of its capital stock. Thereupon the bank is authorized to issue circulating notes to an amount not exceeding 90 per cent of the par value or the market value of the bonds so deposited. To guard against an excess of notes above the legal limit, the bank is not allowed to issue any except such as it receives in blank from the Comptroller of the Currency in Washington. The bonds held by the Treasurer can be applied to no purpose except the redemption of the notes in case the bank fails to redeem them itself. The bank, however, regularly receives the interest on its bonds. The result of this arrangement is that although a bank may fail to pay a note on demand, the holder of the note is secured against ultimate loss. Consequently no person in taking a national-bank note has any occasion to concern himself with the standing of the bank which has issued it. Probably in not one case out of a hundred does the person who receives a note look to see what bank issued it. Counterfeits are of course possible. But the public has to trust the vigilance of the government to guard it against them.

90. It is of course always necessary that a well-ordered bank shall keep on hand a reserve in coin or legal-tender money available to pay its notes and credits as they are from time to time presented. The question how large this reserve must be is one of the most difficult in banking. In the case of private banks it is, as already said, left to the discretion of the bankers

themselves. In the case of national banks in any of the principal cities of the Union the reserve is required to be at least 25 per cent of the outstanding circulating notes and deposits of the bank. In the case of banks situated in the smaller towns the required reserve is 15 per cent.

Of course it cannot be required absolutely that the reserve shall never fall below this limit, because the very object of the reserve is to pay the indebtedness on demand, and if payment is demanded faster than money is received the reserve may fall to zero. The law therefore simply requires that when the reserve falls below the required limit the bank shall not increase its liabilities payable on demand; in other words, it shall stop loaning money.

Thus the law does the best it can to insure that the business of the national banks shall be conducted on sound principles. But experience shows that no legal provisions can afford security against bad management. Examinations are made from time to time to see that every bank has on hand the securities and other property which the state of its business requires. But when a bank is authorized to loan money to individuals, no examination can make it certain that the borrowers are all solvent. Bad debts are incurred from time to time, and stocks and bonds may depreciate or become worthless. The holders of circulating notes have still a security which is almost certain, in the bonds deposited with the Treasurer of the United States, but creditors of all other kinds are liable to suffer loss. Yet, if we should compare the loss actually suffered with the business transacted, the amount of risk would be found surprisingly small. The daily transfers made by bank notes and credits amount in the city of New York alone to many millions of dollars. The total loss in the whole country to depositors probably never amounted to a million of dollars in any one year, except in cases of some great swindle. The danger of loss incurred by money in one's pocket or drawer is many times that which it incurs when deposited in any bank managed with common honesty and prudence.

91. ***The Bank of England Plan.*** The problem of establishing a proper relation between the credit currency issued by a bank and its reserve fund is met differently in different countries. In this respect the Bank of England is governed by the celebrated Charter Act of 1844, a measure due to Sir Robert Peel. The business of the bank is divided into two separate departments, the one the "banking department," the other the "issue department." The banking department receives deposits transferable by cheque in the way described in the preceding chapter, but it does not issue notes. The issue department emits bank-notes for circulation, and keeps its separate reserve fund to insure payment of the notes.

The basis of the regulations governing the issue department is this: it was found that the volume of notes in actual circulation generally ranged between sixteen and twenty millions of pounds, seldom or never falling below the former limit. It was therefore assumed that a certain minimum volume of bank-notes would perpetually remain in circulation, and so never be presented for actual payment at the counter of the bank. This assumed minimum was originally fixed at fourteen millions, but has since been increased to fifteen millions. This amount may be issued by the bank without keeping any coin for their payment, though of course, as already shown, an equal amount of promissory notes from individuals, or of government securities, must always be held by the bank. But for every note issued above this minimum an equal amount in coin or bullion must be held by the issue department of the bank.

The result of this arrangement is that if the volume of the coin-reserve diminishes, so as to be but little above the excess of notes in circulation over fifteen millions, no more notes can be issued. Now, for reasons the statement of which belongs to a more advanced part of our subject, this state of things is likely to occur at the very time when the public are most in need of notes, credit, or other forms of currency. The power of the bank to perform one of its functions is thus paralyzed at the very moment when this function is most essential to the

business interests of the community. This difficulty has been met by an expedient known as a "suspension of the Charter Act" by an "order in council" of the government.*

Three such suspensions have been authorized, in the years 1847, 1857, and 1866 respectively. The suspension authorizes the bank directors to count the reserve of the issue department as a part of the reserve fund of the banking department, so that the latter could still discount the notes of merchants, although its reserve fell below the proper limit.

The necessity of this suspension has subjected the act in question to criticism, on the ground that a law which has to be suspended from time to time proves itself to be defective by its own operation. If the object of human laws is to establish regulations which shall forever govern the relations of men, without any modifications whatever, then this criticism is undoubtedly sound. But taking a different point of view, we may regard the arrangement as one of the finest examples of the practical adaptation of laws to the varying circumstances of mankind that ever was invented. A law is devised which works with entire success except in rare emergencies. The provision that it shall cease its operations temporarily under these emergencies may be regarded from a practical point of view as an excellent one, the law being enforced so long as it is beneficial, and no longer.

* The term "suspension" applied to these orders is sometimes misconstrued by people in this country not conversant with financial affairs, through the same word having been applied here to the cessation of specie payments by our banks. The assumption that a "suspension" of the bank act meant a suspension of specie payments by the bank, though utterly false, was frequently urged by popular orators as an excuse for the issue of paper money. As a matter of fact, the Bank of England has not for a moment suspended specie payment, or thought of doing so, since its resumption in 1819.

CHAPTER XIV.

THE CLEARING-HOUSE AND FOREIGN EXCHANGE.

92. In the great financial centres the banks have a system of balancing their accounts, the study of which is instructive to the student of economics, because it shows an ideal system by which we might imagine the accounts of every individual with the community to be balanced in the actual commerce of the world. To understand it let us commence by considering what the banks are to do with the cheques which they hold upon other banks. Let us suppose that there are ten banks of deposit in a town. Then, under the system explained in Chapter XIII., each bank will have deposited with it each day a greater or less number of cheques drawn upon each of the other nine banks. It therefore has the right to send these cheques around to the banks on which they are drawn and receive the money for them. Were this process actually gone through with, the amount of coin to be transported back and forth would be very great, almost equal in fact to the sum total of all the mercantile transactions of the town during the day. But it is evident that since bank A holds cheques drawn on bank B, and bank B holds cheques on bank A, only the difference of the sums total of these two classes of cheques will have to be paid in money. Thus a certain amount of transportation of coin may be saved by each bank, through a representative, meeting each of the others in advance of payment, exchanging cheques, and having each debtor bank pay the balance due to the creditor bank.

But a little consideration will show that a still greater saving is ideally possible. Let each bank at the end of the day add up the sum total of the cheques which it holds against all the other banks. Let the sum total of these credits be called C.

Then take the sum total of all the cheques against it held by other banks, which it must pay. If we call this sum total of its debts D, it is clear that, after all payments are made, the amount of money in its vault will be algebraically increased by C *minus* D. In other words, it will have received C dollars and will have paid out D dollars. When D is greater than C, its stock of coin will be diminished by the difference of the two quantities; when less, it will have been increased by this difference. Hence all the money which it is really necessary for the bank to handle is this difference. Moreover, since every cheque appears as a credit in favor of one bank, and an equal debit against the other bank, it is evident that the sum total of the C's for all the banks will be exactly equal to the sums total of the D's. If, therefore, we call each bank whose C is greater than its D a creditor bank, and each bank whose D is greater than its C a debtor bank, the sum total of the credits held by the creditor banks will be exactly equal to the sum total of the debts due by the debtor banks. Hence: *If any agency collects all the amounts due from the debtor banks, the agency can with the money thus collected pay all that is due to the creditor banks.*

Such an agency is called a **clearing-house.** All the cheques drawn on any day are brought to the clearing-house on the following morning. The sum total of the cheques held by each bank is added up, thus showing the amount C of each bank's gross credits. The grand total of all these credits is the sum of all the cheques.

The cheques are then re-classified with reference to the banks on which they are drawn. The sum total drawn against each bank is its D. The grand total is again formed, which is of course equal to the grand total of the C's. The table on the opposite page shows how the operation may be performed.

Under each bank whose name is found at the top of a column is written the amount of the cheques which it holds against the several other banks whose names appear on the side. Thus the Exchange Bank is supposed to hold cheques to the amount

of 284 units (which we may consider to be dollars, hundreds or thousands of dollars as we please) against the Planter's Bank; 276 against the Merchant's Bank; 420 against the Grocer's Bank, etc. Adding up its column, we find the sum total

Name of Bank.	Planter's.	Merchant's	Grocer's.	Exchange.	State.	City.	North.	Total.
Planter's.....	.....	$532	$216	$284	$785	$402	$219	$2,778
Merchant's.....	$785	.....	428	276	618	901	284	3,592
Grocer's.....	150	724	.....	420	224	296	698	2,606
Exchange.....	202	168	188	.....	790	416	246	2,060
State.....	619	872	806	206	.....	184	825	3,307
City.....	892	806	404	862	415	.....	214	2,898
North.....	415	194	825	179	849	279	.....	1,941
Total.....	$2,903	$3,296	$2,456	$1,826	$3,801	$2,876	$2,280	$19,938

of all the cheques which it holds against all the other banks is $1892. In the same way the Planter's Bank holds cheques against the other banks to the total amount of $2903, and so on. Thus we have the sums total given at the bottom of each column as the total credit, C, of each bank.

Now consider the horizontal lines. The Planter's Bank has against it $532 held by the Merchant's Bank, $216 by the Grocer's Bank, etc. The sum total is found in the right-hand column to be $2778.

Now take the banks individually with reference to their total debts and credits. The Planter's Bank has a total credit of $2903, and the total debt is found in the right-hand column to be $2778. Balancing this account, it is a net creditor to the amount of $125. Taking the other banks in the same way, we find the following results:

Debtor Banks.		Creditor Banks.	
Merchant's	$230	Planter's	$125
Grocer's	347	State	294
Exchange	168	North	339
City	13		
Total	$758	Total	$758

The debts are now balanced in the following way: The Merchant's Bank pays into the clearing-house $230, the Gro-

cer's $347, the Exchange $168, and the City $13, making a total of $758. The clearing-house pays $125 of this sum to the Planter's Bank, $294 to the State Bank, and $339 to the North Bank, which at the same time exhausts the fund and settles all the accounts. By these small payments transactions amounting in all to $19,283 are settled with exactly the same result to each bank as if each account had been settled separately. A mass of indebtedness which amounts to a vast sum total is thus balanced by comparatively small payments.

93. In practice this clearing-house system can only be applied to banking institutions. But if all mankind were perfectly reliable and honest, it could be carried into all the accounts of society, and the use of money would then be confined to the payment of balances at stated periods. Every man who produces and sells anything, or who renders to his neighbor or the public at large any services for which he receives money in payment, is, by the act of supplying such commodity or service, a creditor; and this credit or service is balanced by the money he receives. For whatever he purchases or gains from others he is a debtor; and he pays his debt in money (cf. § 55). We might then imagine an account kept between each person and society at large, the latter being the clearing-house. The value of every commodity or service which he rendered to others would be recorded, this value being exactly what would have been paid for it had it been done for money. On the other side of the account everything he gained or received from others would be charged against him. Then at stated intervals, once a year for instance, we might suppose his accounts balanced by his paying to some central person the excess of his debits, and receiving the excess of his credits. The final result of this system would be the same to which the actual system of exchange by means of money leads. But owing to the imperfections of human nature, and the impossibility of keeping such an account in a way which every one would agree upon as perfect and free

from error, the balance has to be preserved in each individual case by the actual transfer of money back and forth.

94. *Of Foreign Exchange.* If we consider once more the subject of credit, we shall see that to give a credit entire precision two agencies and two provisions come into play.

The first agency is *a debtor*, who may be any legal person whatever, but in the case that we are now considering is generally a banking or mercantile firm.

The second agency is *a creditor*, or person to whom the payment is due, who also may be any legal person whatever.

One provision is a designated *place* of payment.

Another is a designated *time* of payment.

The necessity of having a designated place of payment will appear on reflecting that without it the debtor might not know where to find the creditor. Hence in mercantile credits the bank or other point where the parties or their agents must meet in order to make and receive payment has to be specified. Again, if no time of payment were understood, but if the act could be postponed indefinitely at the option of the creditor, the debt would be worthless. Hence in mercantile credits the time when payment is to be made is always specified, and when not specified the debt is payable on demand. For our present purpose we need not take account of any postponement of the time of payment, but may consider the debt as payable upon demand.

Now the creditor and debtor need not live in the same place nor in the same country. The place of payment may be yet a third country, though it is more commonly the country in which the debtor resides. Hence a person may be the owner of the right to receive money in a foreign country.

Credit payable in a country foreign to the creditor is called *foreign exchange*, or simply *exchange*. Exchange is said to be *on* the country or city where the payment is to be made. Thus, *exchange on London* means the right, which may be

possessed by a person in any part of the world, of requiring a money payment in London.

In order that foreign exchange may have any value it is evident that there must be intercommunication between the residence of the creditor and the country where the debt is payable. A debt payable in the moon would have no value, even if by looking through our telescopes we could see the gold piled up and only waiting for the creditor to get it. But an American may buy goods in London, and he must then make payment in London. A credit payable in London will be of greater utility to him for this purpose than one payable at home, because it will save him the expense of transporting money to London.

The ownership of foreign exchange is transferred by an instrument in writing called a *bill of exchange*, of the same general character as a bank cheque, but usually more elaborate. Like a cheque, it consists of a formal order from the creditor, or *drawer*, to the debtor, or *drawee*, directing him to pay a specified sum of money to the order of a third person, called the *payee*. When this bill is transferred from the drawer to the payee, the latter becomes the owner of the foreign exchange, with all the rights which pertain to that ownership.*

The payee may reside in any part of the world without in any way impairing his ownership. But in order that the bill may become payable it has of course to be transferred to some

* Owing to the danger of loss and delay in the transmission of bills when the only communication between countries was by sailing-ships or stage-coaches, it was customary to deliver bills of exchange in the form of three separate orders, called first, second, and third of exchange. This custom is still continued. The form of a bill of exchange is commonly as follows:

Sixty days after sight of this my first of exchange (second and third of same tenor and date unpaid) pay to the order of James Smith five hundred pounds sterling, value received, and charge the same as advised.

RHETT & Co.

To Messrs. Smith & Co., London.

In the three orders the words *first*, *second*, and *third* are permuted, so that each is an order to pay provided the other two remain unpaid.

person in the place of payment, which we may suppose to be London. This person presents it to the payee, who acknowledges the obligation of paying it by writing upon it an *acceptance*.

Foreign exchange may be transferred like any other credit. Exchange on London is bought and sold as if it were a commodity in all parts of the world. To see its origin, suppose that an American merchant ships a cargo of goods to a London correspondent for sale. When the goods are sold, the correspondent becomes indebted to the shipper in the amount agreed upon. Thus the shipper in New York becomes the creditor of the firm in London. He can then draw a bill of exchange on his London correspondent, take it to a banker, and sell it for whatever sum it commands from the banker. The latter transfers it to his London banker by the usual indorsement, and the London banker collects the money from the payee. Thus the New York banker becomes the owner of the credit in a London bank.

Now suppose that another American merchant desires to purchase goods in London. In order to pay for them he goes to the banker and asks him for a bill of exchange on London. A bill for the required amount is sold to him at any price that may be agreed upon, and is by him transferred to his London correspondent. The correspondent takes it to the London banker and receives payment.

95. The advantage of this system is that much of the trouble and expense of transporting money backward and forward is saved. If every merchant in New York who bought goods in London had to send money over to pay for them, and every one who sold goods there had to bring his money home, the expense of transporting the money back and forth would be considerable. With bills of exchange it is only necessary to transport the excess of the sum total of debits over the sum total of credits. So long as the payments to men in London balance the payment due from them, there will be a con-

tinual supply of bills of exchange in the hands of New York bankers, and an equal sale of them to merchants. But it sometimes happens that the goods purchased abroad exceed those sold there. New York bankers then find that the quantity of bills of exchange which they sell exceed those which they buy. Consequently their credits in the hands of London bankers diminish and will soon be exhausted. To make them good they have to ship gold from New York to London to an amount sufficient to balance the account. But if the value of the American goods sold in London exceeds the value of those bought, the opposite effect will take place. New York bankers will find the amount of foreign exchange sold them to exceed that purchased from them, and their idle credits in the London banks will increase. Gold must therefore be transported from London to New York to pay the balance due the latter city.

Of course the converse of what we have said holds true of New York in its relations to London. The merchants of the latter city buy and sell goods in New York, and may then have to make payment in New York. Thus exchange on New York is bought and sold in London.

CHAPTER XV.

CONCLUSIONS RESPECTING THE VOLUME OF THE CURRENCY.

96. A QUESTION of fundamental importance which now arises is, What should we regard as the sum total of the currency of the country? We must begin by discussing a disputed question respecting the definition of the word "money" which arises from the want of an exact nomenclature. If we so far accept mercantile usage as to call by the general name of *currency* everything which men pass from one to the other in payment, we see that it comprises the following classes of things:

I. *Coined gold or silver.* We have seen that, on the monetary system which has always prevailed, coined gold or silver must be the ultimate basis of everything that is used as money. Whatever form credit-money may take, it must, to be valid, consist in a right to receive or claim from some party a definite quantity of coin. A right to receive merely ideal money, or a representative of coin, amounts commercially to little more than the right of a hungry man to an ideal loaf of bread. This right may, however, as already shown, be more or less remote in time or place without destroying its value.

II. *Legal-tender notes.* In the United States gold and silver are to a certain extent replaced by promissory notes issued by the government, familiarly known as "greenbacks." At present these notes give the bearer the right to claim from the United States the amount of gold or silver coin named on their face. They have therefore the qualities of bank-notes, but differ from them in being a legal tender. This is the same thing as saying that every person paying them out may throw upon his creditor the expense and onus of having them paid. From 1862, the time when these notes were first issued, to

1879, they were not payable in coin. In consequence their value was sometimes greatly below their nominal equivalent in coin. Since the resumption of specie payment by the government in 1879 they have been at par with coin.

III. *Bank-notes.* The third kind of currency consists of bank-notes. These notes are now issued by all the national banks of the United States under certain limitations and restrictions prescribed by law. They differ from greenbacks in that they are not a legal tender between individuals. The only parties responsible for their payment are the banks which issue them, though the government has taken very efficient measures to secure their payment.

IV. *Bank credits;* that is, the right to receive money from a bank, expressed by figures being written to the credit of the individual depositor in the books of the bank.

Now, it is a disputed question whether anything but coin should be called *money.* This is a question of definition which does not admit of being absolutely settled, because anything may be called by any name which all agree upon. It is, however, certain that the coined money which is the necessary basis of all currency should have a distinctive name. But instead of laying down a rule on this subject which might not be accepted by others, we shall simply try so to use words that in each case it shall be clear what is meant. We shall speak of "coin" or "coined money" whenever reference is made to this kind of money alone.

Currency is something quite different, and may include all credits and money actually used in payments. At the same time, its actual meaning in commerce is very vague. Commonly it means only material money, coin and notes in actual circulation. Sometimes it means paper money, in contradistinction to coin. We shall use it in a sense wider than either of these to designate everything, material or immaterial, which passes from hand to hand as money.

The question now is, How shall we determine the total volume of the currency in dollars? We have shown that the

volume of coined money in circulation is a definite quantity. We now want to know what this quantity becomes in the case of credits. First consider what the phrase "volume of the currency" means. The amount of currency possessed by any one man at any moment comprises the disposable funds which he has received in payment for services rendered, and which he can immediately pay out at his pleasure. It is that which he thinks of as "cash on hand" or "cash on hand and in bank." He may have it in three places—in his pocket, in his safe, or in his bank. In his pocket or his safe it is simply so many dollars in coin and bank-notes. In bank it is simply so much credit; he does indeed think of it as so much money in bank, but, as just shown, this is not so: it is not *money*, but *credit*. But this fact does not prevent its being counted by him and by every one else as so many dollars, nor abridge its power of performing all the functions of money.

In the case of merchants who do business abroad on a large scale we may add that yet another form of currency is that of money or credit in the hands of correspondents. When a shipper sends a cargo of goods abroad and sells them, he may have the right to draw upon the consignee for payment. In this case he conceives himself to have so much money or credit in the hands of the consignee; but since he cannot pay this credit out to others with the same freedom that he can transfer a bank credit or a bank-note, it is not considered as a part of the currency.

97. We have now to consider whether the sum total of the coin and bank-notes actually existing in the country should be considered as in circulation. The principles on which this question is to be settled belong to a more advanced stage of our subject, but the result can be stated here. Currency is to be considered in circulation only when it can be paid out by the owner at his own pleasure, and when he is keeping it for the purpose of payment. If he is gaining interest on it, and is keeping it with that object alone, it is not in circulation. What

we assume as a condition of being in circulation is that, since the owner is gaining no interest, he will invest or expend it as soon as he can find an opportunity. This is the case with the great volume of money which every one has on hand or in bank.

One circumstance now comes in to make the question at this point a little indefinite. Banks and bankers, especially in Europe, often pay a small interest on their deposits, which our national banks are not allowed to do. When the depositor is receiving interest, this may induce him to leave his money in the bank instead of paying it out. But as the interest received is below the current rate at which money can be borrowed, we may consider this inducement as not sufficient to keep a large sum of money permanently out of circulation.

We may now see that the coin held by a bank in reserve to make good its outstanding credits is not in circulation. It does indeed add to the circulation three or four times its volume by enabling the bank to give credit, but this credit we have already counted. Now, since the bank cannot and does not pay the coin reserve out at its own pleasure, this reserve does not belong to the class described.

Nearly the same considerations apply to the funds accumulated in the public treasury. A volume amounting to several hundred millions of dollars is commonly kept in reserve in the vaults of the treasury. It can be paid out only in pursuance of law, and until so paid is not in circulation.

The same rule might apply to the treasuries of the several States of our Union. The amounts held by them are not, however, so great as to specially require their consideration.

98. We therefore conclude that the total volume of the currency may be obtained in this way: Add up all the coin in the hands of persons, all the legal-tender and bank notes in circulation, and all the bank deposits. The sum is the total volume of the currency. We do not include the coin held by the banks or the treasury as a reserve, because this is not in

circulation. If we know the total amount of coin in the country, we may find the amount in the hands of individuals by subtracting the bank and treasury reserves from the sum total. We may therefore find the volume by adding up the total amount of coin, bank-notes, and deposits, and subtracting the reserves held by the banks.

Including bank credits as a part of the volume of the currency is a precaution which is, unfortunately, seldom taken. Financiers generally include only coin and bank-notes in their official publications. But bankers know very well that the total volume of the deposits is the most important factor of all, and the correctness of the student's ideas on the subject may be gauged by the clearness with which he sees that bank credits should be included as well as bank-notes.

An illustration of this is afforded by a well-known feature of business in France. Statistics show that the amount of coin and bank-notes circulating in that country is larger in proportion to its population than in most others. The explanation of this is that the habit of keeping bank accounts and making transfers by cheque is less practised in France than elsewhere. Where an American business man would keep all his money in bank, and draw cheques for all payments, the Frenchman keeps bank-notes in his safe and pays them out to his customers.

At the same time it should not be lost sight of that bank credits and bank-notes perform for the most part quite distinct functions. The former are used principally in large transactions and in the great wholesale operations of commerce. The latter are used in retail trade.

99. The question has sometimes been raised whether bank cheques should not be considered as a part of the volume of the currency, since they pass from hand to hand in payment. The answer to this is that if we include them we must leave out the bank deposits which they represent. We must be careful always to count every credit once, but never to count it twice. Let us look at the matter more closely. John Smith has a

credit of $1000 on the books of the bank. He hands his neighbor a cheque for $500 of this amount. This does not in the slightest degree increase the bank credit; it merely divides the ownership of it: one half now belongs to Smith, and one half to the drawee of the cheque. When the latter transfers the cheque to a third party, this third party is the owner of the half of the credit, and so on indefinitely until the cheque is paid.

But suppose an owner to deposit the cheque in some other bank. Then there is an apparent increase of $500 in the total credit, because the $1000 appears undiminished on the books of the original bank. So far as this original bank is informed, John Smith is still the owner of the whole $1000, while the other bank has $500 to the credit of an entirely different party, thus making a sum total of $1500. In reality, however, there is still no greater sum total of credit. Smith knows that he has only $500 and, being an honest man (else the bank would have nothing to do with him), acts accordingly. The remaining $500 is to the credit of another party in another bank. When the cheques are exchanged in the clearing-house the state of the case will be patent, and Smith's credit will be reduced to $500. Since the sum total of credit remains unchanged by the drawing and transfer of the cheque, it would be a mistake to consider the cheque as an addition to the currency. It is neither credit nor currency in itself, being only the instrument for transferring a portion of existing credit unchanged to another party.

EXERCISES.

1. The bank described in § 81 engages successively in the following business transactions. Write the statement of its resources and liabilities at the close of each transaction.

A. It cashes a cheque for $3000 on another bank, paying coin for it.

B. It then cashes a cheque upon itself for $4000 in coin.

C. A customer then deposits a cheque for $2000 on another bank, and is credited with it.

D. Another customer then deposits $1000 in coin.

E. Its own notes to the amount of $2000 are then presented for redemption.

F. A mercantile firm then borrows $7000, and leaves it on deposit.

G. Another firm then borrows $5000, and takes it in the bank's own circulating notes.

H. A debtor to the amount of $2000 then pays his note in coin.

In making these various entries, note that each separate transaction changes two, and only two, of the five items: Cash in vaults; Promissory notes on hand; Cheques on other banks; Deposits; Circulation. At the end of the last transaction the statement should be found as follows:

Resources.		Liabilities.	
Cash in vaults.....	$34,000	Capital stock.....	$15,000
Promissory notes (discounts)	140,000	Due depositors.....	151,000
Cheques on other banks...	5,000	Circulation	13,000
	$179,000		$179,000

2. Show that the preceding transactions will have added $15,000 to the volume of the currency.

3. If, after the last transaction, the bank should go into liquidation and wind up its business, show that the volume of the currency would thus be contracted by $130,000.

4. Can you give any reasons for the following provisions of law regulating the business of the national banks?

That a national bank shall not hold real estate unless rendered necessary for the protection of its interests;

That it shall not make any loan or discount on the security of the shares of its own capital stock, nor purchase its own stock;

That it shall not pledge or hypothecate any of its notes or circulation for the purpose of procuring money to be paid in on its capital stock or to be used in its banking operations.

5. Why do banks and bankers loan money only for short periods?

6. National banks were taxed a small percentage annually upon the average amount of their deposits as determined each day. The Treasurer of the United States discovered that it made a great difference in the amount of the taxes whether the deposits were determined each day at the close of business, or whether the banks waited until the accounts were settled in the clearing-house the next morning before determining their deposits. Explain the source of the difference, and state which estimate was the just basis for the tax.

7. It was once found that certain speculators in New York would go to a bank and borrow a large part of the legal-tender notes it had on hand, and, having effected the loan, leave the borrowed notes with the bank as collateral security for the payment of the loan. What effect had this proceeding upon the power of the bank to make loans to their customers, and at what expense to the speculators?

8. If one should object that it is not consistent to include bank-notes in the volume of the currency, and exclude bank cheques, taking the ground that both perform the same functions, how would you explain the difficulty?

9. F. A. Walker discusses at considerable length the question what should be considered money, and reaches the conclusion that coin and bank-notes are money, and that bank cheques are not money. He says nothing about bank credits in this connection. Show that there is no necessary connection between a definition of money from his point of view and the question of volume of the currency discussed in Chapter XVI., because this volume does not involve his definition of money. (See his *Money, Trade, and Industry*, Chapter I.; *Capital and Money*, Chapter XVIII.)

10. If bank-notes or other forms of paper credit were used for all payments from ten cents upward, in accordance with the principles of banking, in what respect would the requirements of the medium of exchange pointed out in § 63 be altered, it being assumed that the medium there described is the money lying in the bank to secure the payment of the notes? Are there any of the requirements which would then become unimportant?

11. Consider the influence of the wear and tear of bank-notes upon the profit gained by their circulation. Does it favor the issue of large or small notes?

12. "In a period of depression there is just as much currency in the country as ever, but large sums lie in banks, and the rate of discount on call loans is exceedingly low." What kinds of currency are here spoken of? How does such a state of things affect the volume of credit-currency?

13. "All the notes which represent the gold actually possessed by a bank are no addition to the capital of a country; but all the notes in circulation in excess of that, and which produce industry or which people in general

are willing to receive in return for their commodities or services, are a genuine addition to the capital of a nation." Criticise this use of the word *capital*.

14. Is there most temptation to "wild-cat" banking where the rate of interest is high or where it is low?

15. If the current rate of interest should fall to one per cent per annum, what would be the effect upon the business of banking? Would it tend to increase or diminish the volume of credit-money?

16. Are people most likely to melt down subsidiary coins, or coins of unlimited tender, when they want to use them as metal?

17. Show how, by suspending specie payments, the power of a bank to loan money was increased.

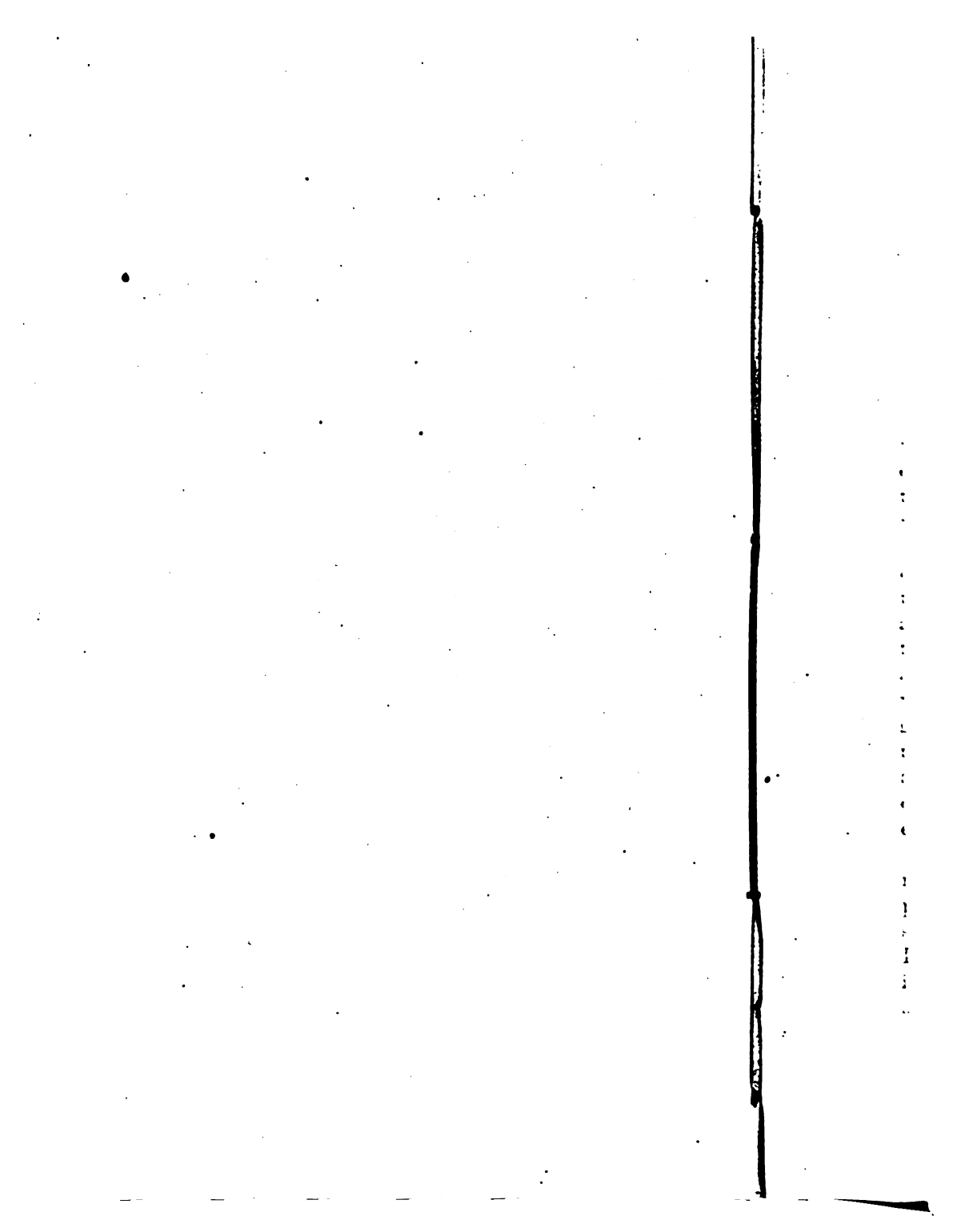
18. When our imports from England exceed our exports, will the bankers of New York find the amount of foreign exchange offered them or that demanded from them in excess?

19. "Of the money daily used a very small percentage is bank-notes. The great bulk is cheques, drafts, and telegrams. The telegraph transmits millions upon millions of bank credits from Boston to New York, Chicago, London, etc., etc., and the reverse, where the telegram is the only money used." Criticise. If instead of telegraphing a man should telephone, would his words be money?—*Professor Sumner.*

20. A banker "may be only just able to pay what he owes to others and yet be, so long as his credit lasts, a wealthy man. Suppose that he owes $1,000,000 (without interest) [deposits, etc.], and has debts of merchants, railway companies, and the government which together could be sold for $1,000,000. If there were a run on the bank and he had to suspend payment, his wealth would be found equivalent to zero; but meanwhile he obtains the interest on $1,000,000, which will leave him a handsome surplus after paying the expenses of the bank. And since there is no reason why he shall not continue to enjoy this surplus for an indefinite period, his business might obviously be sold for a considerable price, even though its assets did not balance its liabilities, provided that the sale were a secret one, so that its credit could be maintained." Could a banker do business on such a basis? Would he add to the wealth of the country?

BOOK III.

THE LAWS OF SUPPLY AND DEMAND.



BOOK III.—THE LAWS OF SUPPLY AND DEMAND.

CHAPTER I.

THE CONCEPTION OF VALUE.

1. VALUE has already been defined, and the method of measuring it described. We have now to consider value as expressing a certain relation between men and their wants as the one term, and wealth and its capacity for gratifying those wants as the other term.

The Conception of Value. The conception of value as a quality admitting of measurement offers peculiar difficulties to the student, owing to its intangible character. No one has any difficulty in conceiving of length, area, weight, temperature, and other physical qualities, because these qualities may all be made evident to the senses. But in the case of value we have nothing that is evident to the senses. One may be given a barrel of flour, and furnished with the most perfect means of measuring all its physical properties, without being able to form any estimate of its value. The latter will in fact depend on where the flour is, and how much people have to eat either where it is now or where it is to be taken to.

It follows that value is not a quality inherent in the commodity, but depends upon the relation of the latter to the persons desiring it. Things have no value unless they are in such a position that those who desire them can command them. If a barrel of flour were buried a hundred feet under the earth, it would, under present conditions, have no value, though not a single one of its physical properties might have suffered.

Many definitions of value have been given; it is called

"Cost of production," "Cost of reproduction," "Estimate of resistance to be overcome in order to command the commodity," etc. These and many other definitions are useful in suggesting a simple idea which hardly admits of an entirely satisfactory formal definition. We may regard value either as *intensity of desire* or as *utility*. When a man pays $5 for a barrel of flour, we may assume that his desire for that barrel of flour is a little greater than his desire for $5, and that the desire of the grocer is a little less. Taking an average, the general desire is equal to that for the money. If the value of a commodity A is $2, that of B $7, and that of C $100, we may imagine that people in general desire these three commodities with intensities proportional to 2:7:100.

We may also say that the value of a commodity in the market is its *utility* to those who purchase it. This definition agrees with the other, because utility, in economics, means capacity for satisfying desire; and, when we suitably restrict the meaning of our terms, we may say with logical correctness that intensity of desire on the part of the person, and capacity of satisfying that desire on the side of the commodity, are equal. But the word utility has another application which we must distinguish from the present one.

2. *The Economic Conceptions of Utility and Value.* Economists have claimed that, although utility is necessary to value, it alone does not suffice to give value; for example, that the utility of iron far exceeds that of gold, although gold has a higher market value. Again, air is far more useful than either, since we should die without it; yet it has no value whatever. The rule was therefore laid down that value depended not only on utility, but on difficulty of acquirement; that which could be acquired without labor having no value, how great soever its utility. Thus arose the conception of two kinds of value—*value in use*, or *utility*, and *value in exchange*, or *market value*.

The two Categories of Things in which Utility inheres. We shall now show that "value in use" and "value in exchange"

are not in reality two distinct kinds of value, but rather the same kind of value inherent in two distinct categories of things. The one category is that of *things in general*, as gold in general, iron in general, and air in general. The other category is that of *particular things*—the cargo of iron which has just arrived in port; a particular ingot of gold; the air which one is at the moment breathing.

Utility in the two Categories. When we say that iron is more useful than gold, we do not mean that a single bar of iron really possesses higher utility than a similar bar of gold would. What we mean is that iron in general, or all the iron in the world, is more useful than gold in general, or all the gold in the world. But a single bar of iron is, under the actual conditions in which men are placed, less useful than a bar of gold, for the simple reason that if the bar of iron were lost or annihilated there are plenty of other bars to take its place; whereas there are not plenty of bars of gold.

It might be said, in reply to this, that the fact of there being plenty of other bars of iron does not really lessen the value or importance of the service rendered by any particular bar, and that it is this service considered in itself which determines the utility of the bar. But a little consideration will show that we cannot make this kind of utility, that is, the utility of things or services in themselves, the subject of any precise thought or estimate. If we tried to do so, we should conclude that the utility of everything which supports life is infinite. For example, in travelling by rail, we might say that the utility of every separate rail over which we pass is infinite, because it keeps the train in which we ride from destruction. It is clear that such a conception of utility cannot be exactly measured.

The more reasonable definition is this: *The utility of an object is measured by the disadvantage which we should have suffered if the object had never existed.* Adopting this definition, the utility depends not merely on what the object does for us, but on what would have happened if the object had not existed. Now, if the bar of iron were non-existent, we should merely

have been put to the labor and expense of making another bar to take its place. So it is this labor and expense which measure its utility, as well as its market value. And every one knows that this labor and expense would be far greater in the case of a bar of gold than in that of a bar of iron.

Value in the two Categories. On the other hand, if we attempt to assign a market value to air, or iron in general, we shall find it to correspond to the utility. If the inhabitants of the planet Mars should offer to purchase our atmosphere, they would find that the market value we set upon it would be infinite, because to part with it would be instant death to the inhabitants of this planet; hence the "value in exchange" of air in general is not zero, but is rather infinitely great. Again, if the inhabitants of Mars should offer to purchase all the iron on our planet with an equal weight of gold, we should not accept the offer. That is, iron as a sum total has a higher market value as well as a greater utility than gold as a sum total. There is therefore no objection to defining the value of commodities as equivalent to their utility, provided that we always attach the correct idea to the word utility. But utility will then be identical with value.

3. This principle is closely related to an improved theory of value formulated by Professor Jevons. Consider a man in a situation where the command of food is difficult or uncertain. A daily supply of a pound of bread will be of the greatest value to him; to secure it he would give all his time if necessary. It would be of equal utility, because it would keep him from starving. The addition of a second pound per day would be of less utility, and would also have less value. If he were offered a third pound per day, the value and the utility would both be still smaller. If the loaves offered went on increasing, a point would soon be reached when he would prefer something else than food, say clothing. The utilities of successive supplies of clothing would go on diminishing in the same way. If the supply were houses of increasing size, their utilities

would go on diminishing. A point would thus arise in the case of each and every commodity at which the utility of an additional portion would be so small that it would be indifferent whether a person did or did not undergo the labor or privation necessary to command it. This Mr. Jevons calls *final utility*. Thus final utility is synonymous with value which is measured by price.

Now, what is ordinarily bought and sold in the market are not sums total comprising the whole of any commodity which exists, but little portions each of which is insignificant alongside of the whole. It is therefore with final utilities alone that the operations of commerce and the laws of economics are commonly concerned.

4. It is sometimes said that economics has nothing to do with anything but this market value, and knows no other measure of value. Although this is true in the generality of cases, it is a grave mistake to regard it as universal. In any case where the question is one respecting the effect of a material increase or diminution in the supply of an article, the benefit or injury cannot be expressed by the market value of small portions. For example, the injury and suffering which would be inflicted on mankind by a general failure of the crops is not to be measured by the market value lost. In fact it would be found that the value of a short crop would exceed that of an abundant one. So with capital. The utility to non-capitalists of all the capital accumulated by others is incomparably greater than the interest they pay upon it. This principle is of special importance in all cases where the question at issue is that of a general policy which will tend to change quantities total of any product. If all the laborers of the country should combine together to materially change the conditions of production, the corresponding change of value would afford no criterion of the benefit or injury to society. This limitation upon the doctrine of value will have important applications.

5. Value has a relation to human needs which, although commonly simple enough, is sometimes seriously misunderstood. Its origin depends on two factors, which must be kept separate in thought. These factors are (1) *need* on the part of man, and (2) *capacity to gratify that need* on the part of the wealth valued. To a man who is as happy as he can be and wants nothing, no wealth can have any value. It is only when he needs to better his condition that value arises. The result of this is that increase of value may imply not only an increase of power to gratify our needs, but also an increase of those needs. By making a man very thirsty and cutting off his water-supply we give value to water. By threatening to inundate him with the Mississippi River we give value to the dikes which keep that river from overflowing his fields. By clearing away the forest we give greater value to the limited quantity of wood that remains. By adding more people to the number who must be fed from one farm we increase the value of the farm and everything upon it. A cold climate increases the value of houses, shelter, and clothing.

The result of all this is that although value is the measure of wealth, it is very dangerous to take it, as is often done, as the measure of human welfare. It may equally be the measure of the increase of human necessities, and it is very difficult to draw an exact line between the two cases. It is only when we compare two different values in cases where men are similarly situated that we can say whether the difference between the values corresponds to the difference of general welfare. If we should find by comparing the two States of Ohio and Indiana that the wealth of one far exceeds that of the other in proportion to its population, we might fairly conclude that the inhabitants of the wealthier State were on the whole better off. But we could not make a similar comparison of the people of Switzerland with those of Minnesota, because the necessities of the former lead them to assign a higher value to roads and fields than these objects possess in Minnesota.

CHAPTER II.

THE MEASURE OF VALUE BY AN ABSOLUTE STANDARD.

6. We have to introduce certain mathematical conceptions into this subject. One of the most common of these is that of one quantity varying directly or inversely as another quantity. A simple example is that of total cost varying directly as price per unit. If I have to buy a box of tea, then the higher the price per pound the more I must pay for the box. This relation is expressed algebraically by saying that the money I must pay for the tea is equal to the product of the price into some fixed quantity.

Let M = the total amount of money I must pay;
P = the price per pound.

Then the law of relation is expressed by the equation

$$M = P \times C. \qquad (a)$$

C being the constant quantity. When we say that C is a constant quantity, we mean only this, that it does not necessarily vary when P varies, or that we suppose it constant in order to get a relation between P and M. In the present example we can readily see what C is. It is the number of pounds of tea in the box. If this is 120, then we have for the cost of the tea

$$M = P \times 120.$$

To take another example, let us inquire what sum total of values can be exchanged by a piece of money in a year. Let us put

E, the total amount of exchanges required;
D, the number of dollars in the coin;
N, the number of times that the coin changes hands in the course of the year.

It is evident that the higher the value of the coin—that is,

the greater the value of D—the greater the value of the exchanges it will effect, other conditions being equal. Hence we may write

$$E = D \times C.$$

A very little consideration will show that the constant C is equal to N, the number of times the coin changes hands in a year. The relation between the three quantities is therefore expressed by the equation

$$E = D \times N. \qquad (b)$$

We may therefore also say that the quantity of business which a coin will transact in the course of a year is proportional to the number of times it changes hands.

7. Inverse variation comes into play when one quantity increases as another diminishes. If I have a fixed sum of money, it is evident that the higher the price per pound of an article the less of that article my money can buy. This relation is expressed by saying that the amount I can buy is equal to some quantity *divided* by the price per pound. Using the same notation as in the first example (*a*), and putting Q for the quantity I can buy, we shall have in this case

$$Q = \frac{C}{P}.$$

Here it is evident that C represents the fixed sum of money which I have to buy with, the same as M in the first example.

From equation (*b*) we derive, by an algebraic operation,

$$N = \frac{E}{D}.$$

This equation expresses the fact that if a certain definite amount of business is to be transacted by a coin, then the smaller the value D of the coin the greater the number of times it must change hands.*

* It may appear to the student that we are here explaining a simple matter in a complex way, since the results are plainer than the reasoning. This is true. The object is to illustrate a principle which we shall have to apply in

8. In all the above cases it is obvious what the constant quantities mean. But sometimes, although we may form a definite idea of these quantities as constants, their meaning depends upon a great many conceptions. One of these conceptions, which we must have at command, is that of a *scale of prices.* Suppose that the price of everything next year should be double its price this year. Then, other conditions being equal, double the amount of money would be required to buy and sell the same goods, since the amount of money required for each purchase necessarily varies as the price. By a scale of prices is meant a general average of prices of all goods bought and sold. If this average of prices increases, we say that the scale of prices increases, and *vice versa.* Let us call the scale S, and let us put M for the amount of money required to make all the exchanges. Then, since the higher the scale the greater the amount of money required, we may write the equation

$$M = S \times C, \qquad (\sigma)$$

C being some constant.

What this constant is depends upon a great many causes; one of which is the total amount of commodities to be bought and sold. It also depends upon what standard of comparison we take for S; that is, for what scale of prices we regard S as equal to unity. But in this case all that is necessary is to adhere to a scale when once adopted. For example, the scale of prices was about twice as high in 1864 as it was in 1861. Hence it required twice as much money to transact a given amount of business in 1864 that it did in 1861. If we call the scale of 1861 unity, that of 1864 will be 2. If we call that of 1864 unity, we had in 1861 $S = \frac{1}{2}$.

It is evident that the constant quantity in equation (σ) depends upon and varies with the total amount of business to be transacted. Therefore if we put

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the future, namely: *Whenever one quantity varies as another, the one may be considered as equal to the product of the other into some third quantity.* Conversely, *if one quantity varies inversely as another, it is equal to the quotient of some third quantity divided by the other.*

B = the total amount of business,

we may write

$$C = B \times K,$$

K being some other constant quantity.

If we substitute in equation (σ), the latter will become

$$M = S \times B \times K,$$

which means that the quantity of money required will vary both as the scale of prices and the amount of business to be transacted.

In all cases of this sort we may consider the algebraic symbols as the measures of certain economic causes. The effects of these causes will then be studied by supposing some one cause to vary while all the others remain constant. Thus we shall get the effect of the variation in that particular case. By considering each of the causes in succession to vary, we get the effects due to the variation of all the causes. The last equation is an example of introducing two varying causes, scale of prices and quantity of business.

9. Suppose the price of everything to be twice as high this year as last, while the quantity produced remains the same. In ordinary language, it would be said that all values had doubled. But it is clear that really nothing would have been any more valuable or useful than before. The measurement of values by prices is therefore not entirely satisfactory. To illustrate the exact nature of the defect, let us suppose an analogous case in measuring length. On getting up some morning, a father measures the heights of his children with what purports to be a foot-rule. He finds that the boy who yesterday only measured four feet now measures eight. Marking his own height, he finds it to be eleven feet. He might claim that his entire family was twice as tall as yesterday, and that he was himself a giant. But the more reasonable explanation would be that his supposed foot-rule was only one half its proper length, and that the actual size of everything else remained unchanged.

Now the measure of values by money is, in principle, similar to the measure of lengths with a rule. When we say a man is six feet high, we mean that his height is equal to six of a certain length which we call a foot. So when we say that a barrel of flour is worth $5, we mean that its value is equal to five pieces of money each of which we call a dollar. In order therefore that we may never be deceived in actual values, both the foot and the dollar with which our comparisons are made must remain unchanged. There is no difficulty about the foot, because it is a material substance, and we can readily find matter which does not vary in its magnitude from year to year. But since value is only a mental conception, and dependent upon human desire, there can be no absolute dollar to compare with. The current dollar may be variable in value, as well as a barrel of flour, and we must always remember that calling a thing, whether metal or paper, *one dollar*, or *one pound*, or *one franc*, no more gives it a fixed value than calling a stick *one foot* makes it a foot long.

10. Is there then any way by which we can approximate to a real standard of value? To show how we may reach such an approximation, let us again return to the case of the foot-rule. It is very evident that in the case we have supposed, that of a man finding himself twice as tall as he was before, common-sense would tell him that the rule with which he measured was only half as long as before. In other words, the logical process would be to measure the rule by the heights of himself and children instead of measuring them by the rule. If he found that yesterday the combined measures of himself and of his children were 16 feet, while to-day they all together measured 20 feet, he would conclude that the rule to-day was shorter than it was yesterday in the ratio 20 : 16, or that it had shrunk 20 per cent. This result would indeed rest on the assumption that there was no actual change in the heights of the family, and whatever error this assumption might be subject to, the same error would his result be subject to. It is evident that in the

case supposed the errors arising from this assumption would be much less than that arising from the supposition that the length of the measure was invariable.

In the same way, in devising an absolute standard of value the most logical process is to suppose that the general or average values of commodities remain unchanged from year to year, and that a general rise or fall in prices is caused by a diminution or increase in the value of the dollars in which the price is expressed. Now, if the changes thus indicated were the same with all commodities, that is, if all prices rose or fell exactly in the same proportion, there would be no difficulty. But as a matter of fact we never find this to be the case. We must therefore seek for some general average which shall be as near as possible to what we want. One possible hypothesis would be this: We might assume that the absolute value of everything produced by the population of the country remains unchanged except that as population increases the total value produced increases in the same ratio. In other words, we may suppose the average productiveness of each individual to remain the same from year to year.

If then we could determine the total money value of all that is produced by all the inhabitants of the country, and divide the result by 60,000,000, or such other number as might express the total population, we should have for the quotient a certain number of dollars which would be the average productiveness of each individual, measured in current money. If we found this average to fluctuate from year to year, we should conclude that it was due to changes in the value of the dollar with which the value produced was measured.

11. *The Tabular Standard of Value.* As a matter of fact it is impossible to determine the total productiveness as just defined with any approach to accuracy. We cannot learn what every man is doing or making by any system of inquiry. The next best course is to take as our standard of comparison the value of a certain number of the great staples of life.

Flour is one of these. In the city of New York a barrel of flour which sold for $5 in the year 1883 would only bring $4 in 1885. If we regard the value of the dollar as invariable, we should say that the value of the flour was 20 per cent less in the latter year than in the former. But if we regard the value of the flour as invariable, then we should say that the value of the dollar was 25 per cent greater in 1885 than in 1883.

Instead of depending on flour alone for a comparison, we should take all commodities which are consumed in appreciable quantities. The table below will show the method better than any amount of description. We have here a list of twenty articles of nearly universal consumption. Of each article we take what we may suppose to be a rude approximation to the quantity which a person may consume in a year. To discover the actual average amount consumed by each person

TABLE SHOWING THE PRICE OF A CERTAIN COLLECTION OF THE NECESSARIES OF LIFE, AT NEW YORK, IN THE YEARS 1876, 1880, AND 1884.

	1876.	1880.	1884.
1 barrel corn-meal	$3 68	$3 80	$3 24
2 barrels flour	12 42	11 76	11 18
1000 bricks	7 72	7 78	7 59
500 feet lumber	7 65	7 40	8 53
1 ton coal	5 53	3 47	4 70
20 lbs. cotton	2 58	2 30	2 10
½ ton hay	8 90	7 53	9 16
2 cwt. ice	0 34	0 30	0 23
1 cwt. pig-iron	1 34	2 06	1 28
2 pair shoes	5 60	4 68	4 80
100 lbs. beef	9 00	8 80	9 90
100 lbs. pork	10 60	6 20	7 90
30 lbs. butter	7 20	5 10	5 40
10 dozen eggs	2 80	1 60	2 10
10 bushels potatoes	6 12	7 50	6 75
40 lbs. rice	2 84	2 72	2 40
1 bushel salt	0 36	0 30	0 29
100 lbs. sugar	10 70	9 00	7 10
1 cord wood	2 96	2 96	3 55
10 lbs. wool	3 30	3 30	3 00
Total	$111 66	$98 27	$101 33

would be a difficult problem, and the quantities in the table must be considered as only rude guesses, the object being to illustrate the principle and not to give a fact with the utmost exactness. With each article is given the cost of the assumed quantity from the wholesale price in the city of New York at certain periods separated by four years. The numbers given are the averages during the years ending June 30th, of 1876, 1880, and 1884. The prices are taken from the reports of the Bureau of Statistics of the Treasury Department.

Adding up the several columns, we find that the collection of commodities described in the table cost $111.66 in 1876; $98.27 in 1880; and $101.33 in 1884.

We now proceed on the supposition that the real value of this collection of articles remains unchanged. But when measured in dollars the value was less by 12 per cent at the second epoch than at the first. From this it would follow that each dollar was worth about 13 per cent more in 1880 than in 1876. From 1880 to 1884 there was a slight increase in the amount of money necessary to purchase the collection. We therefore conclude that during that period there was a slight depreciation in the value of the dollar. It is probable that since 1884 the value of the dollar has again been slightly increasing, so that less money would purchase the collection now than was required during that year.

To perfect this table many additions and modifications are necessary. We should include the rate of wages paid to various classes of laborers whenever it can be exactly determined. But in estimating the rate of wages it would be necessary to take into account the unemployed as well as the employed. Suppose, for example, that out of ten carpenters eight were getting $2 per day, while two were unemployed. Then the average wages of the carpenters would be $1.60 and not $2. The wages of domestic servants, washerwomen, and other classes who render personal services would also have to be taken into account. Manufactured articles, clothing for example, should be more fully represented.

One source of error in drawing conclusions from such a table can be more easily seen than avoided. The improvements constantly being made in manufactures lead to their being really cheaper when measured in terms of human labor, which is our proper ultimate standard. This improvement should be allowed for, if possible, by increasing the quantities in our standard collection.

As a general rule the changes of value to which our current dollar is subject are very little noticed or considered by the public at large. Yet, as we shall hereafter see, nothing is more essential to enable us to understand the condition of the social organism than this knowledge. The value of the dollar ought to be determined from month to month by some central authority and made known to the public.

It will be remarked that the changes in the amounts of money necessary to purchase the tabular collection of commodities correspond to the changes in the general scale of prices defined in § 8. The relation between this scale and the absolute value of the dollar may be stated as follows:

The absolute value of the dollar varies inversely as the scale of prices.

It should also be remarked that the conception which we have called "absolute value of the dollar" is frequently called "purchasing power." This popular form of expression is well adapted to give a clear notion of the subject, since any one understands how a dollar may purchase more at one time than at another.

Both the scale of prices and the purchasing power at any time may be represented by numbers, the values of those quantities at any arbitrary epoch being taken as unity. Thus we should have, taking 1880 as unity:

	1876.	1880.	1884.
Scale of prices	1.14	1.00	1.03
Purchasing power	0.88	1.00	0.97

A standard of value fixed in this way, by the prices of commodities, has been called a *tabular standard of value.*

12. It has been proposed to adopt a tabular standard of value as that for the payment of debts which are due only at the end of long periods of time. The public debts of the principal nations of the world have gone on for several generations; ground-rents in our great cities have sometimes been continued for a hundred years or more. In these cases the essential condition of the contract is that, in consideration of a service rendered at one time, the party receiving it agrees to pay a sum of money at some distant future time. The objection to this system is that no one knows what the absolute value of the money will be when the time of payment comes. We know as a matter of history that great changes in the value of the monetary unit have occurred, and can sometimes trace their causes. The great additions to the gold supply of the world made by the discovery of gold in California and Australia in 1848 and 1850 resulted in a diminution of the value of the dollar. Hence when old debts were paid during the few years preceding 1860, the creditor received a less value than he supposed he would get. During our civil war paper dollars were issued in such quantities that their value fell to one half that of the gold dollar or less. One half of all old debts payable during 1864 may be said to have been forfeited. During the years 1865 to 1880 there appears to have been a pretty steady appreciation in the dollar. The result was that everybody who during the years 1863 to 1865 contracted debts payable now has to pay double the value on which he based his agreement.

Now, one object of the tabular standard of value is to arrange an equitable system for the payment of such debts. This system is in brief that of providing that the payments shall be made, not in so much gold, silver, or other current money, but shall consist of such a quantity of the current money as shall purchase a stipulated collection of commodities.

CHAPTER III.

THE RELATION OF PRICE AND DEMAND.

13. The laws which we have to consider in this chapter are so wide-reaching in their operation that they may be justly regarded as the fundamental ones of economic science. In accordance with a general principle of scientific method, we have to begin the study of these laws by showing how they operate in the simplest cases. What these cases are will be seen by recalling the principal industrial and commercial operations as they have already been described. These operations consist, in brief, in producing goods, taking them to market, and selling them to persons who want to use them. In the case of most products a number of sales are necessary, because nearly every person who makes anything has to buy the materials with which to make it, and after it is made it may pass through several owners before reaching the final consumer. The simplest case which will include all the elementary operations is that in which a commodity is made by some producer, brought to market, sold by the producer to a dealer, and by him to the person who is to consume the commodity. In this case there are two exchanges. The difference between the prices at which the two sales are made will represent the profits and expenses of the dealer.

Let us take the purchase and sale of flour as an example. In accordance with what has been said, we have three classes of people to deal with:

I. *Producers of flour.* These producers actually comprise farmers, millers, and dealers. But, to make our first consideration as simple as possible, we shall combine them all together in the persons of the one class who bring the flour to market and sell it.

II. The *dealers* who purchase the flour from the producers.

III. The *consumers* of flour, who purchase it from the dealers in order to make it into bread for consumption.

Still further to fix the ideas, we shall take the city of New York as an example of a market. In and near this city there is a population of some 2,000,000 to be supplied with flour. Then the classes of people above described will be, firstly, those who are bringing flour to New York for sale; secondly, the dealers who purchase it at wholesale; thirdly, the two millions of people who are buying it from the dealers to eat.

There are in reality many grades of flour, and the prices of different grades will differ. But, to make our first example as simple as possible, we shall suppose but a single average grade.

Since the dealers are the owners of all the flour they sell, or act as agents of the owners, we may consider them at liberty to charge what price they please. But the quantity which they can sell depends upon the price they charge. The relation between the price and the sales may be called the *law of price and demand*, and is such that the higher the price the less the quantity which can be sold.

The reason of this law is that every rise in price will lead to economy and retrenchment on the part of consumers. The diminution in the amount sold arises in two ways:

Firstly, by leading consumers to be more economical in the use of flour, eating and wasting less bread.

Secondly, by leading them to employ substitutes for flour, such as corn-meal, oat-meal, or potatoes.

We readily see that the diminution in the consumption arising from an increase of the price will be different with different classes of consumers. The wealthy do not take any account of the price of flour in determining whether they shall or shall not eat bread. The lower we descend in the scale of wealth the more rigorous the economy which must be practised, and the greater the diminution in consumption which will be caused by a rise in price.

14. We now have the following definitions of certain words which will be in almost constant use.

By **market** is meant a place or region where one or more commodities are bought and sold on a large scale. Chicago and New York are great wheat markets. Many thousands of farmers in the Northwestern States send their wheat to the former city for sale, while American and European dealers purchase wheat or flour in New York. The essential feature of a market is that the price of the commodity is publicly known, so that everybody knows very nearly at what price other people are buying and selling.

By the **supply** of a commodity is meant the quantity of that commodity brought to any market for sale. For example, if we find that there are to-day 100,000 bushels of wheat in Chicago awaiting purchasers, we might say that the supply to-day is 100,000 bushels. But it is better to consider the supply as the total quantity brought to market for sale in the course of a year, or other unit of time, rather than as a stock on hand.

By the **demand** for a commodity is meant the quantity of that commodity which can be actually sold in any market at any given price during a year or other unit of time.

We must carefully distinguish between this economic signification of the term *demand* and the popular one, which merely implies desire to purchase. No amount of mere desire for a commodity is sufficient, in itself, to constitute a demand. The latter arises only when the person desiring has the means as well as the willingness to purchase. "There is no demand, economically speaking, in the hungry eyes of a penniless boy looking at tarts through a pastry-cook's window. Without pennies an unlimited longing and passion for their consumption would not permit that boy to contribute aught to the demand for tarts."

Introducing the word *demand*, the law of price and demand which we have already mentioned may be expressed as follows:

FIRST LAW: ***Other conditions being equal, demand varies with price in such a manner that as the price increases demand diminishes, and vice versa.***

Universal Applicability of the Law of Price and Demand. The law of diminished demand with increased price applies not only to goods bought and sold in market, but to every form of service for which people pay money. If hackmen charge too much for the use of their carriages, fewer people will employ them and more people will walk or take the street-cars. If a theatrical manager puts the price of his tickets too low, more people will apply for them than the theatre will hold; if he sets the price too high, some of the seats will be empty. If bricklayers demand higher wages, fewer people can afford to build houses. By lowering their wages the number of people who can afford to employ them is increased. When a Washington newsboy finds the day passing away without his supply of New York papers being disposed of, he lowers the price from five to three or two cents, knowing that he may thus sell at a low price papers which he would otherwise have to lose entirely.

15. *Sensitive and Insensitive Commodities.* Let us next inquire whether we can make any approximate estimate of *how much* the demand will fall off with a given increase of price. First let us see why it falls off at all. The reason is that the income of people in general is limited. If, therefore, prices rise without any general increase of income, it will be impossible for individuals to purchase the same amount of everything as before. The fundamental question we have been considering is, How will demand vary with price, all other conditions being equal? Among the other conditions which, by hypothesis, remain equal are the incomes of the purchasers. Since, then, each man has an equal amount of money to spend whether the price be high or low, the sum total which he can purchase with his money will vary inversely as the price. For instance, if prices should all be doubled, he could purchase on the average only half as much as before. We may now reasonably suppose as an average rule that the result will be the same for each separate commodity that it is for things in general; that is,

that the quantity sold or *demanded* will vary inversely as the price. For example, if it is a question of how many peaches a man will purchase for his table, we may suppose that each person will be willing in the course of the summer to reserve a certain definite amount of his income for buying peaches. Then if the price is one half the usual one, he will buy twice as many as before; and if it is double, he will buy one half as many.

However sound this rule may be in its application to the general average of all the things exchanged, we cannot suppose it to be true of each commodity considered separately. For both as a matter of fact and by reason we know that the demand for some commodities will fall off much more than that for others in consequence of a given increase of price. We need words to express these differences, and therefore shall adopt the following definitions:

Sensitive commodities are those the demand for which falls off most when the price is raised.

Insensitive commodities are those the demand for which is but little changed by changes in price.

We readily see that those commodities will be insensitive on which consumers have the least ability or the least inducement to economize. A few examples will make this clear.

Pepper, *mustard*, and *table condiments* generally will be insensitive because their cost is insignificant. *Tobacco* is insensitive because a man who becomes addicted to it finds it so difficult to give it up that he would rather economize on something else if the price of tobacco rises. Nearly the same remark applies to wines and spirituous liquors, so far as their use as beverages is concerned.

Food considered as a whole is an insensitive commodity, because it is most difficult for any one to go with much less than his accustomed quantity. But if the price of only one particular kind of food rises, it might prove to be sensitive, because some other kind would be substituted for it. For example, if the price of potatoes rises, bread can be eaten instead of pota-

toes, and *vice versa*. So one kind of bread or meal can be used instead of another. But if the prices of all sorts of food should rise in the same proportion, there would be no motive to substitute one for the other, and people would have to economize on something else.

On the other hand, clothing, especially fine clothing, is probably a sensitive commodity. Most people could make their old clothes last a good deal longer than they do; there is therefore a strong inducement to buy fewer fine clothes, or no fine clothes at all, when the price rises. The same is true of those luxuries which people indulge in only as their means increase.

As we ascend in the scale of luxury we find that the demand for commodities depends more and more on the cost of things below them in that scale, and therefore proportionally less on their own cost. Hence we cannot strictly classify them as being, in themselves, sensitive or insensitive.

Investments and other forms of capital are a case in point. Many people save up a part of their annual income to be invested in bonds, stocks, and other interest-bearing securities. If then the price of anything which they deem necessary rises, they may stop saving and spend their surplus income in paying the increased price for the necessary articles of current consumption. This will tend to make the necessaries and small luxuries of life less sensitive than the average, because by economizing in investments and costly luxuries consumers will have more money to spend on other things.

16. *Reaction of Demand on Price.* In what precedes we have compared the effect of different scales of prices for a commodity when the general conditions which exist in the market remain unaltered. Our conclusion has been a law according to which a cause which changes the price of a commodity, without at the same time changing anything else, will change the demand. This limitation is expressed by the condition "other things being equal." Although other conditions are always equal for the time, yet as a matter of fact they do

not remain equal from one time to another. That is to say, although it is certain that to-day, or any other day, more flour can be sold at $5 per barrel than at $5.10, yet it is possible that more can be sold at $5.10 to-morrow than can be sold at $5 to-day. Some new use may be found for flour, or it may suddenly be wanted to make up a failure of the crops in Europe. Then there will be an increase of demand, even if the price should remain unaltered or should be raised. Since in this case a greater quantity can be sold at the old price, dealers will be able to increase the price, while at the same time selling a greater quantity than before. Self-interest will prompt them to do this. Hence we have a second general law:

Other conditions being equal, an increased demand for any commodity increases its market price.

Combining this law with the other, we see the nature of the mutual interaction between price and demand. Weak reasoners sometimes find it hard to see that increase of price causes diminished demand, and that diminished demand diminishes price. In reality this mutual interaction is necessary to equilibrium. If increase of price acted on demand so as to increase it also, we should have an increasing price causing an increased demand; this increased demand would again increase the price, and so the two would go on increasing without stopping. Evidently this can never be the case. But since the actual rule is, increasing price diminishes demand, this diminished demand tends to diminish the price; a state of equilibrium is reached between the opposing forces; a rise of price is checked by the fallling off of demand, and falling price is stopped by stimulating demand, which keeps it from falling without limit.

17. Our next inquiry is how the two preceding laws connecting price and demand are to be modified so as to apply to the actual way in which business is done. The case to which the laws apply without modification is that when the demand which we consider comes from the people who actually consume the products, and when the price which we consider is

what those people have to pay. Of course this price is generally the retail price. Now, will the same law apply in the wholesale markets, and in those cases in which large purchases of goods are made, not for purposes of consumption by the producer, but for re-manufacture into other things?

Granting that consumption and retail prices are connected by the laws already laid down, we remark that the retail and wholesale prices necessarily vary together, so that the consumption must indirectly depend upon the wholesale price. Now, although it is not always true that the retail price varies immediately with every change in the wholesale price, yet these two prices must in the long-run correspond to each other, at least in the case of the great staples of life. Suppose a grocer to purchase flour at $4 and to sell it at $4.25. It is certain that if the wholesale price is increased 25 cents, he cannot continue to sell at the same price as before. If the wholesale price falls, he will have to lower his price in a corresponding degree, or other dealers will undersell him and he will lose his customers. Thus, as a general rule, the profit in selling at retail will be the lowest which will permit the retail dealers to meet all the expenses of their business and compensate themselves for their labor and skill. The modifications to which this general rule is subject will be considered in future chapters. We therefore conclude that, as a general rule, the demand will increase as the wholesale price diminishes, and *vice versa*, because the wholesale and retail prices vary together.

18. *Equilibrium of Supply and Demand.* In a normal state of things the price will be so adjusted as to preserve an equilibrium between the supply and demand. To return to our illustration, suppose that, the price of flour being $5 per barrel, the dealers of New York find that the quantity which comes into their market is sold nearly as fast as it arrives; there will then be no occasion for a change in either the supply, the demand, or the price. Suppose then that there is an unusually good crop, or that from any cause whatever an increased supply

is brought to market, the conditions of the market otherwise remaining the same. The result will be that so long as the price remains at $5 the increased supply will accumulate on their hands. In order to get rid of it they will be obliged to lower the price. This will cause an increased demand both at home and abroad, according to the first law. The normal equilibrium will be reached when the price is so fixed that the increased demand thus caused exactly balances the increased supply.

Suppose, secondly, that instead of an increased supply there is a diminution in the supply. Then the people who go to market offering $5 per barrel cannot all be supplied. To decide who shall be supplied, the dealers raise the price. This action will, by the first law, diminish the demand. The normal price will be that which brings the demand down to the supply.

To illustrate the second law, let us consider that the supply remains constant, but that the change occurs in the demand. Suppose that owing to a failure of the European crop there is an increased demand. The immediate result will be exactly the same as in the case of a diminished supply. The demand cannot be entirely satisfied and the price must be raised. The rise in price will have the double effect of increasing the supply and diminishing the demand. When they are equalized equilibrium will be restored.

19. *Discounting the Market.* The sale of goods at retail for consumption generally goes on at a very regular rate. But in the wholesale market the changes may be sudden to any extent, the exchanges being determined not merely by the present price, but by the judgment of men as to what the price or the supply is going to be in the future. If, in the opinion of a wholesale dealer, the price of wheat is going to rise five per cent within the next three months, he will at once proceed to purchase a large stock. If it is going to fall, he will make no more purchases than are necessary for his present business, but will rather make contracts to sell wheat three months hence

which he has not yet bought, but which he intends to buy at the lower price. Since all the wholesale dealers proceed on the same system, it follows that the prospect of a future rise in price will cause a present rise. If reports show the probability of a short crop, then, although a year may elapse before the scarcity will be felt, an immediate rise of price will result. This will be true even if the short crop is that of some foreign country, because then that country will demand more wheat from us. The act of purchasing according to an expected price is called discounting the market. The effect of this cause is to make prices more steady than they would be if no account were taken of the future supply and demand. The wholesale dealers in the great markets adjust their price, not to the supply and demand of to-day, but to the probable supply and demand of the future. They make the adjustment so that in the long-run the consumption shall as nearly as possible balance the production.

Speculative Transactions. In the regular course of trade all commodities may be considered as passing from hand to hand only in one direction. If A sells wheat to B, it ought to be because A is in nearer communication with the producer than B is, while B is in nearer communication with the consumer. If A sold to B and B sold back to A again, there would have been two sales with no net result. So, also, if the wheat passed from A to C through the hands of B, when C could just as well have purchased from A, B's labor would be wasted. Hence when all transactions are conducted in the most economical manner there will be no more exchanges than are necessary to the proper care of the wheat while it is passing from the farm to the mill.

But there is one occasional exception to the rule. A and B may have different opinions on the subject of the future price of wheat, the one thinking that it is going to fall, the other that it is going to rise. Then B may purchase the wheat, not to send to some other market, but to keep in order to re-sell it in the future at a higher price. Perhaps he will sell it back

to the very man from whom he bought it, in which case the latter will suffer for his want of judgment. This operation of selling merely to take advantage of a prospective rise in price is called *speculation*. Its economic effects are greatly exaggerated in the popular mind. It amounts to little more than betting on the future price of the article speculated in.

Prices in Different Markets. It is obvious that there cannot be two prices for the same commodity in the same market at the same time. Thus the price of wheat in Chicago is telegraphed over the country from day to day with as much exactness as we know the height of the barometer. The same is true of the great cotton markets in Charleston and Liverpool, and of the silver market in London.

It is also evident that in two different markets the price cannot differ by more than the cost of transportation from one market to another. If it costs fifteen cents to transport a bushel of wheat from Chicago to New York, it is certain that the price in New York cannot differ by more than fifteen cents from that in Chicago. For, if there were a greater difference, dealers would purchase in the other market and transport it, thus saving money. If the demand in New York is such that it is necessary to transport wheat from Chicago to meet it, then the price in New York must be higher than that in Chicago by the cost of transportation.

20. *Is the rise of price consequent on increase of demand temporary or permanent?* It does not follow that because increased demand raises the price the rise will be permanent. The first effect of such a change will be that the wholesale dealers will try to purchase more of the commodity and pay higher prices to the producers. If there is any prospect that the increased demand will be permanent, production will be stimulated; manufacturers will enlarge their facilities and employ more men, and new factories will be started. As the ultimate result of this, one or the other of two opposite effects may follow. We have shown in Book II. that commodities

can frequently be made more cheaply on a large scale. If then the increased demand is such as to lead to more economical production, the ultimate result will be to lower the price. For example, the price at which axes and hatchets are sold is very much below what they would cost if very few people wanted them.

On the other hand, it may happen that an article cannot be produced on a large scale with advantage owing to the limited supply of something necessary to its production. A rise of price due to increased demand may then be permanent, as will be shown in the next chapter.

21. *The Law of Value applied to Money.* When money and goods are exchanged for each other we may consider the act of exchange to consist in the buying of the money with the goods, and the latter will then be the price paid for the money. In this case increasing the supply of money has the same effect as increasing the supply of a commodity; that is, the value of the money relative to the goods it exchanges for falls. This is the same as saying that a larger amount of money will be required to purchase a given commodity; that is, there will be a rise of prices. The law under which this occurs will be fully explained hereafter. At present we need only state the result, which is: *If the volume of currency be increased, all other things being equal, money will be cheaper relatively to goods, and thus the scale of prices will be increased in the same proportion.*

ILLUSTRATIONS AND EXERCISES.

1. Mill says there can be no such thing as a general rise in values. Explain this generally, and especially in the case of a general rise of prices, and show under what limitations it is true.

2. Can we make any exact comparison of the value of a barrel of flour among the Puritans two centuries ago with its value at the present time?

3. Show the different results when the value of an article rises in consequence of its scarcity, and when in consequence of some new use being found for it.

4. During the Civil War the prices of nearly all commodities were twice as high as before. During the ten years following the close of the war there was a gradual diminution of all prices, so that the owner of a farm in 1875 might find it worth only half as many dollars as in 1864. Do you conceive that the rise of values in the one case and the diminution in the other indicated any actual change in the national wealth? What did these variations indicate?

5. If we regard value as purchasing power, explain how it is to be measured. Does any error arise from this view of value?

6. If we lived in a country where all the food and clothing we wanted could be had without labor and without price,—where all kinds of food ready to eat grew from the ground, and clothing of the latest fashion grew upon trees,—would values be greater or less than they are now?

7. It is sometimes said that exchange increases wealth; that is, that things are more valuable after they have exchanged ownership than they were before. Under what limitations is this true, and how does the friction of exchange enable us to define the increase? Compare the value of a pound of sugar in the barrel at a grocer's store with the same value after the sugar has been sold to the customer.

8. Can you apply the theory of value so as to lay down any rule to govern the education and training of youth? If there is one kind of knowledge and understanding which a man can readily acquire whenever he wants it, and will acquire by his daily experience, and another kind which he can acquire only when under the discipline of the school, show how the theory of value will apply to the question what the school should teach.

9. Some writers have claimed that prices are regulated by competition. If we grant that this is true, does it give us a satisfactory scientific theory of the subject?

10. In our markets the price of flour and corn-meal are generally in the ratio 3 : 2. Explain how this ratio arises.

11. "The price of mutton on an average exceeds that of beef in the ratio of 9 to 8: we must conclude that people generally esteem mutton more than beef in this proportion, otherwise they would not buy the dearer meat." Can you make any improvement on this statement? Do the respective quantities of mutton and beef which are eaten come into the question?

12. In London, on April 15, 1865, copies of the London *Times* containing the news of President Lincoln's assassination sold at the price of sixty cents or upward. Mr. Shadwell says he knows of no cause which determined the price to be exactly sixty cents. What can correctly be said on the subject? Is there any reason to believe that the price of sixty cents was at any moment uniform all through the city, or that it continued through a period of several hours? What do you suppose was the actual state of the case?

13. Arrange the following articles of common consumption according to what you suppose to be their respective degrees of sensitiveness, putting the most sensitive at the top of the list and the least sensitive at the bottom: corn-meal; coarse rye flour; pork; beef; sugar; molasses; coarse clothing for laborers; fine clothing; tobacco; imported wines; writing-paper; ink; pepper; magazines; paintings; government bonds.

Each product may be considered sensitive or insensitive according to the criterion laid down in § 13. If the rise in price causes more than the corresponding economy of consumption, so that people in general spend less money for it when the price is high, the commodity is sensitive. In the opposite case it should be classed as insensitive. If the consumption varies inversely as the price, so that the money expended for a commodity may be considered to remain constant, the commodity should be classified as sensitive in an average degree.

14. Show that the degree of sensitiveness of a whole class of commodities, one of which may be substituted for another, will be very different from that of each of the commodities considered separately. Consider, for example, the various kinds of meat—beef, mutton, veal, etc. If we suppose the price of one of these to rise while the price of all the others remains constant, we should find for each one taken separately a certain degree of sensitiveness. But suppose the price of all should rise in the same proportion; show that they would then be less sensitive. If food of every kind should rise in the same proportion, to what extent would it prove sensitive?

15. If statistics show that in the city of Cincinnati the sales of flour had increased 23 per cent from one year to the next, while the price was 10 per cent higher, would you conclude that the change of price was due to a change in the demand or *vice versa*? What would you reply to an objector who should tell you that this fact was contrary to the law of price and demand laid down in § 14, and so disproved that law?

State the criterion for determining in such a case whether it is the price which changes the demand or the demand which changes the price.

16. It is said that the Dutch possessors of certain islands in the East Indies, where the whole supply of certain spices was raised, were in the habit of ascertaining every year the total crop. If they found it to exceed the amount they could sell, every one was required to burn his share of the excess in order that the price might not be lowered by too much being thrown in the market. Were they the gainers by this operation? On what principle would the gains depend?

17. If the price of food of every kind should rise 25 per cent, what effect would that rise have upon the consumption of other commodities, and what effect upon their price?

18. Sugar is much more necessary to table enjoyment than pepper. Yet, should the price of both rise threefold, people would economize much more on the sugar than on the pepper. Explain this. Apply the explanation to the classification of commodities in the order of necessity on the following definition: Assume a man's income to diminish progressively. Then things are necessary in the order in which he dispenses with them.

19. Show that insensitive commodities are those whose price will rise most in case of scarcity.

20. If all commodities should become cheaper in the same proportion, of which class, the necessaries or the luxuries of life, would the consumption be the more augmented?

21. What effect would a general failure of the crops all over the world have upon the price of fine clothing?

22. If such a failure of the crops were foreseen by the wholesale dealers in grain six months before it occurred, but remained unknown to the general public, in what way would the public be led to economize in the consumption of their existing supply of grain?

23. When our government issued a large volume of greenbacks in 1863, gold began to be at a premium in New York. Many people attributed this state of things to the gold-dealers of Wall Street. Have you any opinion on the subject? What effect had the issue and the war together upon the prices of commodities in general? Could the changes in the prices of commodities affect the premium on gold, and if so, how?

24. If railways were abolished, what would be the effect upon manufactures in Iowa, and upon agriculture in New England?

CHAPTER IV.

MONOPOLIZED REQUISITES OF PRODUCTION.

22. In the preceding chapter we were mainly concerned with the mutual relations of price and demand. The next subject in logical order is the effect of a change in the demand for a commodity, or its price, upon the supply. From the popular point of view, which was to a certain extent the view of the earlier economists, the law is very simple. When the price of a commodity rises, more people will engage in its production, until by their mutual competition the price is brought to the lowest paying point. If skill is required in the work, then the producer of that skill must be paid for the labor which he spent in acquiring it. If the compensation is more than sufficient to pay for the labor, it will stimulate men to acquire the skill. Thus the gains of a physician form the compensation not only for his current work, but for the time and money which he spent in learning his profession. It is thus conceived that the price of a commodity can be ultimately expressed in terms of human labor, provided we include not only the labor spent directly in production, but in collecting all the requisites of production, whether capital, skill, or knowledge.

There was one obvious exception to this. The production of breadstuffs and other means of subsistence required land, and it was clear that the price of land did not admit of being measured by human labor, since it was not the product of labor. Thus rent became an important factor in the price. Rent was defined by Adam Smith as the income received by the owner for the original indestructible powers of the soil.

It was next seen that production could not be increased indefinitely by the mere increase of human labor, but that in many cases every additional unit of quantity produced required

more labor than the preceding unit. For example, suppose that from a given farm 1000 bushels of wheat can be produced at a certain cost in labor, fertilizers, management, etc. It is possible that by doubling the cost, that is, the labor and material devoted to the farm, 2000 bushels could be raised. If with every addition of this amount of labor 1000 additional bushels of wheat could be raised from the farm, it is evident that there would be no limitation upon the amount. But as a matter of fact we know very well that this is not the case, and that after a certain point every additional bushel will cost more and more labor, and that practically no amount of additional expense will increase the product beyond a certain maximum.

We must now recognize the fact that at the present time all the requisites of production are not equally at the command of every one, but that in a great number of cases their possession is limited to such an extent that no sufficient approximation to the truth can be gained by assuming that production can be measured in labor alone. We need a word to express the possession of requisites for production which are not at the command of men in general, and the word which best expresses this is *monopoly*. The use of this word is indeed subject to the great objection that it is used in ordinary language as a term of reproach. Were this idea necessarily associated with it, economists should find another. But it should be a part of the training of the scientific student to eliminate all ideas of praise and blame from the terms which he uses, and to remember that science deals only with things and facts as they are. Hence when we use the word "monopoly" we attach no reproach to the idea conveyed, but simply use the word to designate a certain state of things.

23. ***How the Monopoly Element comes into the Question.*** Suppose a great increase in the demand for a commodity C. We may suppose, to fix the ideas, that while a year or two ago a quantity of C represented by 1000 units could be sold annually at a price of $1 per unit, the same amount can now be sold at

$3 per unit, or that 3000 can be sold at $1 per unit. It is then clear that the result must lie somewhere between two extremes.

The first extreme case is that in which all the elements necessary for the production of C are at the command of everybody, or at least of as many people as are necessary to supply the increased demand of 3000 units. The result of this will be that a slight increase in the price of C will stimulate those already engaged in producing it to enlarge their facilities, and will draw other people into the work. This increase of production will continue until the amount produced is trebled. As production has kept pace with demand, the selling price will be the same as before, or at least not materially higher.

But suppose, as the other extreme case, that some element necessary to the production of C cannot be commanded by the world at large. Perhaps there is a man X who alone possesses the knowledge and skill to make C at a less cost than $3 per unit, or who has a patent on something which is a necessary component of C, or there is a company Y which owns a mine out of which the raw material for making C can alone be got. It is then clear that there will not necessarily be any increase of production, but that, instead of 3000 units of C being sold at $1 per unit, there may be only 1000 as before, with the selling price raised from $1 to $3 in consequence of the increase of demand.

The word which expresses this exclusive command by X or Y may now be defined as follows:

A **monopoly** is the ownership or command, by one or a limited number of persons, of some requisite of production which is not solely a product of human labor.

24. A little consideration will make known to us three classes of monopolies.

Firstly, the exclusive command of every man over the faculties with which the Creator has endowed him constitutes a monopoly. If a man is born with an unusual share of administrative or business ability which enables him to organize and

direct the productive labor of thousands of other men in the most effective and economical way; if he is born with any special talent, or with unusual skill in any branch of production, then he has the monopoly of a valuable requisite of production which his fellow-men cannot take from him. This monopoly is not only a rightful one, but the principle on which it rests is at the basis of all our ideas of human rights.

The second great class of monopolies consists in the private ownership of natural requisites of production. As already shown, the laws of all civilized nations recognize, establish, and protect this ownership. Such natural requisites are land, and the coal, iron, and other minerals which are beneath it. Although the value of land depends largely on human labor, yet the land itself, the acres on the surface of the earth, are entirely the gift of nature. The iron, copper, silver, tin, and other ores beneath the surface of the earth are also entirely the gift of nature. Although labor is required to give them value, yet every one is not at liberty to apply this labor; the right to do this being absolutely confined to the owners. The question of the rightfulness and expediency of this class of monopolies may be regarded in some of its points as an open one, but its discussion does not belong to the purely scientific treatment of the subject.

The third class of monopolies consists of those which are granted by governments, such as the exclusive right to build a railway or dig a canal over particular regions, to make a patented article, or to publish a copyrighted book. Patents and copyrights are in a certain degree a mere extension of the first class of monopolies, since their object is to guarantee to inventors and authors the benefit of any superior skill with which nature may have endowed them.

It may seem that patents and copyrights do not strictly come within our definitions of monopolies, since what is monopolized cannot be called a requisite of production limited in supply. It is perfectly true that they are not material requisites of production. But we have shown that *knowledge*, which is imma-

terial, is a very important requisite, and what is granted to the patentee or author is the benefit of a certain knowledge which he has himself acquired. The man who can write a very interesting and popular novel has been endowed by nature with a peculiar skill which he can use to increase the pleasure of his fellow-men. It is perfectly right that he should gain whatever compensation he can by the use of this special skill. But when he writes his story everybody can copy it and spread it, unless forbidden to do so. Thus in order to secure the author's right to the product of his skill and labor it is necessary that government shall prohibit the multiplication by printing of copyright stories, except with the author's consent. In form the monopoly is that of printing certain combinations of words in a book, and we may consider the monopoly to consist in the exclusive right to use these printed words. From this point of view the object in which the wealth inheres would not be the work of nature. But the author's faculties are originally the work of nature, and it is this which we should regard as really protected by the copyright laws. These same remarks apply to patented machines with so few modifications that the reader can make them for himself.

25. *Limitations upon the Definition of the Word Monopoly.* The essential feature of the monopoly element in production, which gives it its economic importance, consists in this, that the possessors of monopolies may have to a greater or less extent an advantage over their less favored fellows in the price which they can command for the use of the special agencies monopolized. This advantage must be not merely a temporary one, but such as to entirely prevent competition on equal terms between the less and the more favored classes in the use of the monopolized agency. In order that the definition may include nothing but what is essential to this advantage, certain limitations have to be placed upon it.

First Limitation. A monopoly is of no value or account unless the number of persons who possess it is so small com-

pared with the quantity of the monopolized article which the public demand that these persons can command a higher price for the article than if there were no monopoly. For example, in the widest sense, we may say that John Smith has the complete and exclusive monopoly of his own hands. But if his hands are no better than those of other people, this monopoly gives him no advantage over them, because they can do whatever he can. Again, the shoemaker has the monopoly of his own skill; and it may be that not one man out of fifty in the community has the natural aptitude which would enable him to become a good shoemaker. But if this fraction of the population has the aptitude, and can make all the shoes the community demands, the monopoly is of no value. We must therefore distinguish between *effective monopolies*, which give their possessors an advantage in production, and *ineffective monopolies*, which give no such advantage, either because there is not sufficient demand for the monopolized requisite, or because too many people share the monopoly. Hereafter whenever we use the word monopoly we shall be understood to mean an effective monopoly.

Second Limitation. It must be understood that the application of the word monopoly is limited to such requisites of production as are not the sole products of the labor of the person owning them. Now, a number of elements enter into every production. When, therefore, we inquire how far a requisite of production is monopolized, we must analyze it into its original elements until we find where the natural agency comes in. For example, the skill of the shoemaker may be entirely a product of time and labor spent in acquiring it. But in order to effectively expend that time and labor he must have possessed in the beginning the industry and perseverance to enable him to learn his trade. This industry and perseverance may be in part acquired qualities, and therefore not monopolies; but in so far as the man did not acquire them they are monopolies. In order to acquire them he must have had some good qualities born in him, and his parents must have taken

some pains in promoting these qualities. Now, since the man did not make himself nor guide his parents in his early education, it is to these native and early acquired habits that we are to look for the monopolized elements in his nature.

So also with regard to any finished product. We cannot generally say of the product as a whole that it is or is not monopolized. What we must do is to trace its production back to its beginning, and see what monopolized elements in the shape of patent-rights, land, ores, or other natural products were necessary elements in its existence.

Third Limitation. Monopolies are not in general absolute, but the advantages which they give vary in degree. As a general rule a monopolized requisite is not one which the owners of the monopoly alone can supply on any terms whatever, but it is one which they can supply with less labor to themselves than other people can. To return to our former example: even if one or a few men, owing to their superior skill, should monopolize all the shoemaking of a community, it may nevertheless be the case that other people could, on a pinch, make shoes. Again, the ownership of land is very valuable near a city, and continually diminishes as we go away from population. If the owners near the city charge too high for their products, people can fall back on the more distant land. Some deposits of iron ore may be so rich in metal and so near the surface that iron can be made from them at six dollars per ton; from other deposits it might cost twelve dollars a ton, and from yet others twenty, fifty, or a hundred. The values of these monopolies therefore differ in degree, and no one of them becomes effective until it will pay to utilize the ore.

Since, in these cases, a monopoly only means facilities superior to those enjoyed by other men, there is implied in it a term of comparison comprising men in general. Then when we say that this man X possesses talents, skill, or a natural agent superior to those enjoyed by men in general, the question may arise what we are to understand by this last term. There are so many gradations among men that we can set up no exact

standard as that of men in general. The question cannot be answered in a way which shall be mathematically exact. We can only say that the proper term of comparison is the class of men having the same general talents, education, possessions, or powers of production in the community at large. Since this implies a series of gradually increasing monopolies, we may call them *relative* or *graduated monopolies.*

An *absolute monopoly* will then mean one possessed only by one or a limited number of persons.

26. *Temporary Monopolies.* If an individual or a company has a great capital invested in a manufacturing establishment, although there may be no actual monopoly, yet for the time being the situation will be the same in its relation to varying demand as if the skill and capital invested in the establishment were monopolized. An increasing demand, especially if it is believed to be temporary, cannot be at once met by other men founding similar factories, because this requires time, while the product is wanted now. But if demand falls off, the establishment cannot advantageously devote its capital and its organization to any other industry than that in which it is engaged. Cotton-making machinery can make nothing but cotton, and the operatives of the factory are not readily available for other employments. The result is that the owners of the factory may be obliged to go for a considerable period without gaining either profits on their investments or compensations for their peculiar skill.

In this connection we must always remember that the economic effect of a monopoly does not arise merely from its preventing competition on equal terms, but that it also implies that the owner of the monopolized product cannot change his occupation without a relative disadvantage. For example, a lawyer who has rare natural gifts for his profession cannot advantageously change that profession merely because he finds the demand for his services falling off. The chances are that in any other profession he can do no better than the common run of mankind.

Thus the conclusion that the supply of a monopolized element cannot be readily increased to meet an increasing demand implies that it cannot readily be diminished to meet a diminishing demand. This is as true of a temporary monopoly as of any other one.

27. *Recapitulation.* The preceding definitions may be summed up as follows:

I. When one or a limited number of persons command the supply of any natural requisite of production their power is called a *monopoly.*

II. Monopolies inhere, not in manufactured products, but in the original elements or requisites which are necessary to the existence of the product.

III. A monopoly is *ineffective* if the number of holders is so great and the demand for the requisite so small that the holders can command no higher price for the requisite monopolized than will pay them for the labor and capital which they expend in supplying it. It is *effective* when the demand becomes so great or the supply so small that the monopolized requisite commands a higher price than this.

IV. A monopoly is *complete* or *absolute* if no others than one or a limited number of possessors can supply the requisite. It is *relative* or *graduated* when it comprises only superior facilities for supplying the requisite, so that the latter can be obtained from an unlimited number of sources by increasing the labor and capital devoted to obtaining it.

V. A temporary monopoly may inhere in a manufactured product through a sudden increase of demand, or through all the manufacturers combining to limit production and keep up price.

28. *Effect of Monopolies upon the Relation between Price and Supply.* We have seen that when the demand for a commodity increases in such wise that more of it is wanted and, in consequence, people are willing to give a higher price for it,

one of two things will occur. Its producers must either make a greater quantity of the commodity in order to supply the increased demand, or they can and will charge a higher price without increasing the quantity. Thus the supply and demand can be equalized in either of two ways by a proper adjustment of the price. Both adjustments will commonly come into play; that is, a larger quantity will be produced, but not a quantity so much larger that it will all be demanded at the old price. The production will be increased and the price raised at the same time.

Let us return to the illustration of § 22. We there supposed that 1000 units of a product C were sold annually in a certain condition of demand at the price of $1 per unit. When the demand is increased threefold the extreme results would be:

1000 units produced as before, but sold at $3 per unit.

3000 units produced and sold at the old price of $1.

If, as a result of the increased demand, 3000 units were produced, corresponding to the increase, it would show that there was no effective monopoly. If only 1000 units were produced, it would show that the monopoly was absolute. The average result might be that 2000 units would be produced, and would be sold at perhaps $1.50 per unit, or at least at some price exceeding $1.

The state of equilibrium is reached when the price is so adjusted that the quantity produced and brought to market is all that can be sold at that price, and all that the producers are willing to make at that price.

29. The important distinguishing effect of a monopoly is that it prevents the supply of the commodity in which it inheres from varying in response to variations in the demand. The question what kind of monopolies enter into a manufactured product, and to what extent they enter, can be best answered by investigating the effect of an increased demand for that product.

If the conditions of production are such that any increase of

demand will be met by a corresponding increase of production without raising the price, then there is *no monopoly*. If, owing to the necessity of requiring skill or capital, a considerable period, say a year or more, is required to increase the production, then there may be a *temporary monopoly*. If, however, the price comes down to its former limit when a reasonable time has been given for increasing production, the monopoly is only temporary. If it will never come down, then the monopoly is *permanent and real*.

If the same party or parties must supply the market, no matter how much the demand may be increased, the monopoly is *absolute*. If the increased demand and higher prices result in a limited competition, the monopoly is *relative*.

Moreover, in every case, to find in what particular requisite the monopoly inheres, we must seek out those requisites the supply of which cannot be indefinitely increased without increasing the cost. These will be the monopolized requisites.

EXERCISES.

1. Consider the various requisites for the production of a pair of shoes, and describe to what extent they are each monopolized, whether the monopoly is effective, and, if so, what effect it has on the variations of price arising from variations in demand.

2. Show that a requisite of production which requires long years of study for its perfection will have to a certain extent the character of a temporary monopoly, although it may be within the reach of every one who devotes the necessary time to the study.

3. Would it be correct to say that society is any worse off on account of natural monopolies of any kind? For example, is it bad for society that there are a few physicians or surgeons of such extraordinary skill that they can command fees to the amount of a hundred dollars in a day?

4. Enumerate the principal monopolies of the first class described in § 24, and show under what circumstances and to what extent they are effective.

5. Under what circumstances will the owner of a waterfall be in possession of an effective monopoly?

6. Show to what extent and in what way the ownership of iron ore in various parts of the country constitutes graduated monopolies; that is, under what circumstances these monopolies are of the highest value to their owners, and under what circumstances they are of no value at all.

CHAPTER V.

THE RENT OF LAND.

30. The ownership of land comes within the definition of a monopoly, as given in the preceding chapter. For land, that is, the acres on the earth's surface, is a product of nature and not of human skill. It is also a product limited in supply; or, at least, that portion from which any given collection of people can conveniently draw their subsistence is limited. This will be made clear by reflecting that no person can go out and fertilize and cultivate land at pleasure, because he will find that all the land within reach is already occupied by somebody else, and is owned by that other person as private property. But it does not follow from this that the monopoly is either an unlimited or an effective one, as we have defined these terms. We must therefore look more closely into the matter with a view of seeing how far the usefulness of the soil is to be regarded as the product of human labor, and how far as the gift of nature. There are economists who have claimed that land has no other value than that which has been derived from labor expended upon it by its owners, and is therefore not a monopoly at all. The general opinion of economists is, however, on the other side. The theory generally in vogue, and which we are about to develop, is commonly associated with the name of Ricardo, who first brought it to public attention in a clear and forcible way. In explaining it we shall closely follow F. A. Walker, who has developed it with great clearness and fulness.*

We begin by stating a fact which favors the view of the dissentients. We all know that land depends very largely for

* In his little book, *Land and its Rent* (Boston, 1883).

its fertility upon human labor. Before a crop can be raised the trees must be cleared away, the stumps pulled out and burned, and the ground cleared of the roots. Even in the case of the great prairies, where there are no trees to clear away, it is generally necessary to dig drains and to clear off the grass before the land can be cultivated. Then labor is to be applied to plough the land and sow the seed. Now suppose that one man working in this way upon a little farm of twenty acres could raise two hundred bushels of wheat. It will be found in many, perhaps most countries, that if two men work and put in twice as much material in the shape of fertilizers, plough twice as well, and so on, fully twice the crop can be raised off the farm. Possibly they might raise four hundred and fifty bushels by their combined efforts, and thus have twenty-five bushels each more than if they had worked alone on two separate farms of the same size. Perhaps if three men put their labor and fertilizers into the same farm, they would raise three times as much as one man. Now if this scale went on indefinitely—that is, if by increased labor and expense in fertilizing land, a proportional increase of crop could always be obtained—there could be no effective monopoly in land. Every man who wanted wheat could get as much by joining hands with his neighbor and helping him to cultivate his farm as he could by getting a farm of his own.

But such is not the case. A point is soon reached in which an addition to the amount of labor and material expended on the farm will not give a corresponding addition to the crop. This point is called the *point of diminishing returns*. We may consider it as reached in every community and on every farm after a short period of cultivation. That is, the more wheat we want from a given farm, the greater the labor and capital required per bushel.

31. Let us now suppose that, within convenient reach of a city or any other market, there are four tracts of land having four different degrees of fertility. The first tract, with a given

amount of labor and capital, will yield twenty-four bushels of wheat to the acre, the second twenty-two bushels, the third twenty bushels, the fourth eighteen bushels. Let us begin with the case in which the city is so small, or the market one where there is so little demand for wheat, that it will only pay to cultivate part of the twenty-four-bushel tract. Then it is evident that the other tracts can command no rent.

Suppose a new man to come into the country seeking for land to cultivate. Since, by hypothesis, a portion of the twenty-four-bushel tract is still uncultivated, it will pay the owners of that tract better to let the new-comer have a farm upon it at a rental of one bushel per acre per annum than to leave it wholly uncultivated. He can pay this rent and still have twenty-three bushels per annum as his portion of the crop. This course will pay him better than it would to cultivate the next poorer tract free of rent, because then he would only get twenty-two bushels, and he will of course choose it. If the point of diminishing returns has not been reached, it might even pay all concerned still better to employ the new man, with his capital, as an assistant in improving the cultivation of the already-cultivated farms than to rent him a new one. Hence all the twenty-four-bushel farms will not be under cultivation until the point of diminishing returns has been reached.

Suppose that all the farms of the twenty-four-bushel class are at length under cultivation, and that, owing to increased population or increasing demand, there is now more wheat wanted than can be raised from these farms under the existing system of farming. Supposing that no wheat is imported, this demand must be supplied by commencing the cultivation of the next lower grades of land, namely, those in the twenty-two-bushel tract. Now, by hypothesis, the same amount of labor and capital necessary to produce twenty-two bushels from this second tract will produce twenty-four bushels from an acre of the first tract. It will therefore pay a tenant as well to rent a farm from the first tract at two bushels per acre per annum as

to have land in the second tract for nothing. Hence, at this point, the land of the first tract will yield a rental of at least two bushels per acre.

Suppose that by the still increasing demand the lands of the twenty-bushel and eighteen-bushel tract come into cultivation. Then, reasoning in the same way, the twenty-bushel tract will yield a rental of two bushels, the twenty-two-bushel tract a rental of four bushels, and the twenty-four-bushel a rental of six bushels. For, the cultivator who rents land from the first tract at six bushels, or from the second at four, will be on the same level with the one who gets land on the third tract at two, or on the fourth for nothing. The general law is now evident: As population increases, lands of lower and lower degrees of fertility come into cultivation, and the better lands command rent. If there is every grade of land within convenient reach, then the rental will be equal to the excess of fertility of the best soil over that of the poorest soil which it will pay to cultivate.

32. In the preceding exposition we have, for simplicity, compared lands as if the rental depended solely upon their fertility. But other causes come into play which can be brought into the same class by an extension of the word "fertility." We have supposed that with a certain amount of labor and capital land would yield eighteen, twenty, twenty-two, and twenty-four bushels to the acre. The general question is not, however, that of the number of bushels to the acre, but that of the number of bushels to a given amount of labor. When we use acres to illustrate the case we tacitly suppose that the labor of cultivation is proportional to the acres. If from any cause whatever it should cost twice as much labor to cultivate an acre of one farm as of another, the fertility of the first per acre would have to be twice as great in order to command the same fraction of the produce as rent. We must therefore interpret the word *fertility* as meaning the yield for a given amount of labor, and not the yield per acre.

In the next place, we have supposed that the crops from the different farms compared were all equally accessible to the market. If this is not so, then the land farthest from the market will be at a relative disadvantage. But this again will be brought into the rule by including in the cost of cultivation that of taking the crop to market. The rule will then be that those lands from which crops can be gathered and brought to market with the least total expenditure of labor will command a higher rent.

33. *Relation of Rent to Price of Breadstuffs.* In the case we have been supposing the tenants of the best farms will be paying to the land-owners a rent of six bushels of wheat per acre per annum. In order that they may be able to compensate themselves, they must get such a price for the remaining twenty bushels of their wheat as to return to them all they have expended in labor and material. That is, the price of wheat must be high enough to pay for all the labor and capital expended in cultivation, and to make good the rent. This fact has given rise to the impression that the price of wheat is increased by the rent of land.

A close examination will, however, show that this view reverses the relation of cause and effect. It is the high price of wheat which causes rent, and not rent which causes the high price. That is, rent is an effect, not a cause, of the high price. The simplest way to show this is to refer to the two first laws of supply and demand (Chapter III.). These laws being true for each separate market, must be true at any one moment for the world at large. According to the first law, when the price of wheat is fixed at any given figure there will be a certain definite quantity which can be sold at that price. If only a certain number of bushels are brought to each market, then it will command in that market a price which will be higher the fewer the number of bushels brought. The buyer need not ask or care why the supply is plentiful or scarce. All that concerns him is to get his wheat at the lowest possible

price. And if other people are ready to buy all that comes at a certain price, he also has got to pay that price or go without the wheat. Hence *the price depends upon the quantity of wheat brought to market.*

Now, it is quite true that if all the land-owners from whom it was possible to obtain a supply of wheat could by combining among themselves prevent more than a certain number of bushels per annum from being produced, or, what amounts to the same thing, if they would not allow any one to have their farms except at a higher rental than the natural one just laid down, then they would raise the price. But this would only be because some of the tenants would refuse to cultivate the farms on such terms, so that less wheat would be raised. Such a combination is practically out of the question. Even if it were practised, it would not be a case of high rents causing high prices, but only a case of artificial scarcity caused by a combination on the part of the landlords to raise the price of wheat and thus to enable them to charge more rent.

To sum up: Wheat is high because only a certain limited quantity is brought to market.

No more is brought to market because more cannot be raised without having recourse to less fertile lands, which it will not pay to cultivate until the price is yet higher.

The cost to the farmer of raising any particular portion of wheat brought to market has nothing to do with the price at which it can be sold.

To dispose yet more clearly of this view, let us trace the chain of causes in the opposite direction. Suppose one or all the owners of the best class of farms actuated by the philanthropic desire to make the cost of bread to the public as low as possible. They therefore offer the lands to their tenants free of rent. Will the price of wheat fall in consequence? Not at all. This remission of rent would not increase the quantity of wheat which the farms would yield. The tenants would take the same amount to market as before. The same amount being brought to market, it would command the same price.

The only effect would therefore be that the tenants would themselves pocket the rent which they had formerly paid to the landlords.

EXERCISES.

1. Is it necessary to rent that there should be a regular gradation of fertility down to no-rent lands? For example, if in the case supposed in § 31 the first two tracts should be of equal fertility, and all the rest of the region utterly barren, would the fertile tracts command rent?

2. If one should claim that no land commanded any other rent than interest on the capital invested in it, how would you test the truth of his claim?

3. Show how the theory of rent applies in a country where the farmer owns the land instead of hiring it. What element then takes the place of annual rent?

4. Why is land more highly cultivated in England than in America?

5. Why is the rent of land so low in a state so densely populated as Massachusetts?

6. When wheat is brought to market for sale, does the question what it cost the farmer to raise it have anything to do with the price he can command for it? If yes, how do the buyers know what it cost in any particular case, and how can the cost affect the bargaining? If no, show in what way cost of production does affect price.

7. If land-owners were forbidden by law to charge rent, what would be the effect upon the supply and the price of breadstuffs?

8. Would it be correct to say that it is of the very nature of a monopolized requisite that its supply cannot be increased indefinitely, even if the owner wanted to do it?

9. On what terms would the owner of an absolute monopoly find it profitable to increase the supply of his monopolized requisite? Take as an example the case of the spices in the East Indies already mentioned.

10. What has been the effect of steam-transportation upon the price of agricultural land in the neighborhood of great cities? If we had no railways from the city of New York, what would be the result upon the price of land in the neighborhood of New York and on the Hudson River? Show according to what law the rent of land would vary in such a case, supposing the whole region to be of equal fertility.

CHAPTER VI.

ON COMPETITION AS DETERMINING COST.

34. It is a current opinion that prices are necessarily kept down to nearly their lowest limit wherever free competition is permitted. The reason is briefly this: If the dealers in a commodity do not sell it at the lowest paying price, others will step in and offer the same commodity at a lower price, and thus draw away all the custom from those whose charges are too high.

This proposition is sufficiently near the truth in the wholesale trade of the country, and with respect to those necessaries of life which are produced and sold independently by great numbers of persons. In this case business success depends entirely upon the producer and jobber being able to sell at the lowest possible price. It is less true in the retail markets, and may fail entirely in special cases. We shall now analyze the principal cases in which it fails. Take first the general principle as we may conceive it exemplified by an example. A city dealer sells cloth at one dollar per yard which has cost him eighty cents per yard. We may suppose this cost to include all the expenses of business and loss upon waste material, thus making the net profit twenty cents a yard. It occurs to the dealer to inquire whether by lowering his price to ninety-five cents a yard he will get custom enough to make good the diminution in the rate of profit. To effect this result his sales must increase by at least one third, otherwise the diminution of profit on each yard from twenty to fifteen cents would not be compensated. Now if, when he thus lowers his price, he could make everybody know that fact, and could satisfy the public that it was a real diminution in price and not merely the substitution of a poorer article, he would succeed.

But in the majority of cases the cloth will be purchased only occasionally, and in such small quantities that it will not be worth while for the man's customers to make a special investigation in order to learn about the diminution of price. Consequently it may well happen that his sales would not be increased by one third, and he would then lose by his attempt to sell at a lower price.

The less important the commodity, that is, the smaller the amount of money any one expends for it annually, the less likely it is to be sold at the lowest possible price. It is not worth any one's while to change his grocer because some other grocer sells pepper or mustard ten per cent cheaper. Even in the case of such staples as tea and coffee, it is so difficult to ascertain the quality before trial that the customer finds it a very difficult problem to determine who it is that really sells at the lowest price, taking quality into account.

In such cases, however, there is a tendency analogous to competition which does tend to lower prices by giving an advantage in the long-run to him who sells the cheapest. Suppose two persons appear in business, one of whom goes on the principle of exacting the highest price from his customers that he can profitably command, while another sells as low as he can, perhaps from mere conscientious motives. The first may make the largest profits in one year and for several years, but the fact that the second is a more economical dealer to purchase from will gradually become known to a larger and larger section of the community, so that he may ultimately have the most profitable business. Moreover, the very state of things which makes this access of custom so slow will make it permanent. A large body of customers having become permanently satisfied with his dealings will not take the trouble to investigate whether some one else may not serve them a trifle cheaper, and thus he may be on the sure road to fortune. The general fact thus illustrated is this: If the question which suggests itself to the retailer's mind is, What are the most profitable prices for me to charge these individual customers for this

article? the answer may be very different from what it will be if he asks himself what price will in the long-run best serve to give him a permanent and enduring trade.

35. *Cases of Prices not determined by Competition.* We have in the three preceding chapters laid down and illustrated the law that if the price is above the normal one at which supply and demand are balanced, the supply will exceed the demand, and there will be in the case of a commodity a continually increasing accumulation which cannot be disposed of. There are, however, large classes of services in which the equilibrium will be brought about in a somewhat different way. A price may be fixed either by law or custom for certain personal services. If this price is below the normal one, a sufficient number of people cannot be found to render the services, and there will be an unsupplied demand. If the fixed price is above the normal one, and if there is no monopoly, the supply will exceed the demand.

Carriage-fares afford one case in point. It is so difficult to satisfactorily fix the price of a drive in a carriage by bargaining between the passenger and the driver, that in nearly all civilized cities a tariff of prices is fixed by the municipal authorities. In cities where this tariff is low, passengers will frequently find it difficult to secure carriages, because it will not pay the owners to keep more carriages than there is constant employment for. When it is above the normal price the number of carriages to be had will exceed those which are necessary to carry all the passengers demanding them at the fixed rate. The result will be that a certain proportion of the carriages will stand idle a large part of the time. In this case the competition is not a competition as regards price, but a competition to secure a passenger at a fixed price. It is a fact continually lost sight of that this competition is just as effective in bringing the compensation of each individual driver to the lowest limit as would be a competition in the matter of prices. No permanent gain can accrue to individual drivers by having the

tariff raised, unless they can at the same time keep out competition. If free competition is allowed, additional carriages will be bought, more men will go into the business, the profits will be divided among a larger number, and this process will continue until the individual profits of each driver are reduced to the lowest point at which he is willing to remain in the business.

Another case is afforded by the sale of newspapers. As a general rule the price at which any newspaper is sold remains unchanged through all the vicissitudes of supply and demand for long periods of time. The equilibrium is then kept up by publishers accommodating their supply to the demand, increasing or diminishing it according as there is more or less matter of public interest in the paper sold.

If the prices of all journals were fixed by law, custom, or mutual agreement, the competition would be entirely in respect to quality. That paper would get the largest circulation which most pleased its subscribers. The result would be that more and more labor and expense would be devoted to its production, and by this competition the profits would again be brought to their lowest limit.

36. *Cases where Competition is Difficult.* In the preceding cases we have supposed the service to be such that it can be easily rendered, and that great numbers of people can engage independently in rendering it. But in recent times a large and important class of services have sprung up, in which the amount of wealth and organizing ability required to render them is so great that a temporary monopoly may be established, though none is legalized. Then this monopoly may be rendered permanent, or at least may be continued through many years, by skilful management. Such a case is seen in the telegraph system of the United States. When a single company possesses the only line between two cities, or over a certain region of country, it can fix its own price for messages. It may find it profitable to keep this price far above the nor-

mal rate, rather than to enlarge its facilities, so that a great number of messages can be sent at a low rate. If a competing company is proposed, its promoters may foresee that, at the low prices to which competition would lead, it would be unable to make a profit. It may therefore stay out of the competition long after the business would be sufficient to give it a paying profit, were they secure against a fall in prices. During all this period of doubt and uncertainty the first company has the field to itself. Suppose at last a competing company to build a new line, and to take messages at a low rate; if this low rate is not as profitable as a higher one would be, the two companies may combine in some way, or the more wealthy may buy out the poorer one, so that the monopoly shall still be kept up. The whole history of telegraph companies in the United States has been of this character. It is supposed that great numbers of small companies have been established for the sole purpose of being bought out by more powerful rivals, in order that the latter might continue their temporary monopoly.

It will be seen that the only cases in which individual profits can be kept permanently above their normal minimum is that in which some monopoly is owned by the producer. This monopoly may be one of individual skill, knowledge of business, or the possession of some natural agent.

37. *Competition among Business Managers.* We have seen, in treating of labor, what an almost infinite variety there is in the employments which men engage in for pay. The natural endowments of men by which they are qualified for one or another employment also differ in an important degree. Considered in their effects, these differences in capacities are enormously greater than they appear when considered in themselves. To illustrate what we mean, consider the difference between the captain of a great steamship and one of the sailors. They differ very slightly in bodily structure, and the sailor has the same general mental qualities as the captain. He speaks the same language, and there are a great many things which he

knows how to do better than the captain does. The superiority of the captain consists in this, that he knows how to navigate and direct the ship, while the sailor does not. This is a very small difference in itself. But, small as it is, it makes all the difference between conveying the ship safely to port and losing a million of dollars and a thousand lives by wrecking her.

We have now to show how the law of supply and demand operates in consequence of these great diversities in natural and acquired capacities. The question is, what cause determines the rate of compensation in any particular employment, or the income which a man can gain in any business. To avoid wandering through a wilderness of different occupations, let us take as examples the various operations necessary to the production of shirts. We shall then suppose a person to have his choice between becoming a field-hand, a planter engaged in raising cotton, a cotton-broker, an operative, a manager of a cotton-mill, a dealer in cotton cloth, a manufacturer of shirts, or a shirt-dealer.

If these different occupations could be equally well pursued by all men, it is evident that the most agreeable would be preferred. The occupations of planter, manager, and broker are more agreeable than that of the operative, and the latter is more agreeable than that of the field-hand. Hence there would be more competition in the first three occupations than in the two last, and the field-hand would gain the highest income among all engaged in producing shirts. But we know that this is not the case. The reason is obvious. The number of people who are qualified to become brokers, managers, and merchants is very small, while the large majority of men are born capable of being trained for the position of field-hand. Were it not for this great diversity in natural capacities, we should have the singular result that the occupations we now consider the lowest would be best paid.

To fix the ideas, let us suppose the number of people who are required to supply shirts to the population of New York City to be as follows:

1,000 field-hands,
50 planters,
10 cotton-brokers,
2,000 operatives,
5 managers of factories,
100 shirt-dealers.

Suppose, however, that instead of the number of persons qualified to perform these functions in the best manner being in the same proportion, they are in some such proportion as this:

10,000 field-hands,
40 planters,
5 brokers,
10,000 operatives,
8 managers of factories,
1,000 shirt-dealers.

We see that there is a comparative scarcity in the number of persons qualified as planters, brokers, and managers. To understand exactly what this signifies, we must remember that, when we speak of the number being thus limited, we do not mean that only this number could by hook or by crook follow these occupations. What we mean is that the number who can fill them in the most advantageous manner is thus limited, and that, in consequence of this, they can in a certain sense defy competition.

To show what the result of this is, let us compare two cotton-brokers who at first sight may seem to be about equal in ability. But one is not a good judge of cotton, does not know what farmers are most to be relied on, does not know exactly what kind of cotton will bring the highest price, cannot well judge what the state of the market will be next year, and does not know the cheapest way of getting his cotton to the manufacturer. The other broker knows all these things. The skilful broker then outbids the other with the most honest farmers, buys the best kind of cotton, especially that kind of cotton which in a few months is going to rise in price, has his

stock well housed, and gets it to the manufacturer at a cheap route, and by a line of railway which is reliable in its management. The poorer broker outbids his keener neighbor with another class of farmers, buys cotton which is going to fall in price, finds that it is not of the quality which he expected, learns when too late that somebody has cheated him by putting stones inside the bales, has a lot of cotton damaged by getting wet, pays more for transportation to the manufacturer, and finds he has to sell it at a lower price because the market is glutted with that particular kind of cotton. At the end of the year he may find that he has made just $5 as the result of the year's business, while his more skilful neighbor may find that he has made $50,000.

The same principle holds true in the management of the factory. The poor manager buys the wrong kind of cotton at the wrong time, does not know how to mix it properly, gets it wasted, finds his machinery getting out of order, cannot make his operatives work together in the most advantageous manner, and does not know the right time to sell. If there were no other manager who could do better than he, he would still be able to live. But there may be a single competitor who will know how to arrange these matters by avoiding all waste and having all the operations conducted in the most advantageous manner. He will sell his goods at so low a rate as to drive his competitors out of business, and at the same time make a fortune for himself. Whether the breadstuffs and other products which are every year brought from the far West to the Atlantic seaboard shall cost $100,000,000 or only $80,000,000 for transportation depends entirely upon the skill of a few dozen railway managers. The managers who can bring them for $80,000,000 will drive the others out of business and make $20,000,000 profit for their companies.

38. All these cases of special skill in business management are examples of a graduated monopoly of the same kind as that in the ownership of the soil. Let us imagine ourselves

able to measure and record the business ability of every man in the country. The result would be of this general nature: that a dozen men might be ranked in the highest class, a score or two in a class a shade below, a hundred in a third class, several hundred in a fourth class, and so on. Since there is more business than can be transacted by the half-dozen highest classes on this scale, it follows that the latter will be able to command or gain by their services an income proportionate to their superiority over the lowest class that can make a living. These incomes will be gained by such wise management that the inevitable waste of material and labor shall be reduced to a minimum, and that the product shall be what consumers most want.

39. The principle involved can be seen in another case. Let us imagine that among a tribe of savages one man has learned to make first-class fire-arms and excellent gunpowder. His fellows see how he does it, and they find that they can also make a kind of gunpowder and of fire-arms. But, through want of knowledge, what they make is so poor in quality that they can seldom get near enough to an animal to shoot it. The skilful man understands the chemistry of the subject so well that with his gunpowder and arms a buffalo can be shot before the animal sees the huntsman. Then the skilful man could, without injuring his fellows, charge for his services the whole advantage which he gave them. He could, perhaps, if the tribe was a thousand strong, charge for his powder and guns one half of all the game killed with them, and the rest of the tribe would find it more advantageous to pay this price than to use the best weapons they could themselves make. Moreover, this bargain would not be to their disadvantage, since the skilful man could never command more from them than the value of the advantage he afforded.

CHAPTER VII.

OF PROFITS AND COST OF PRODUCTION.

40. At a first glance the term "cost of production" may seem perfectly definite and precise in meaning. When, in accordance with universal practice, it is measured by money, it signifies the value of the labor and money which the producer must expend in order that an article may be produced. If for each yard of a certain kind of cotton the owner of a factory is obliged to pay out a certain sum of money for labor, materials, repairs, interest, etc., then the cost of production is said to be that sum per yard. When the cotton is sold, the excess of money received after paying all expenses connected with the sale is called **profits**, and is supposed to be the share received by the owners of the factory as the result of the skill, enterprise, and capital which they have invested in the work. If we trace out what the factory pays, we find it to be divisible into **wages** and **cost of material.** But the materials which are purchased cost labor, and this labor has to receive its wages from the proceeds of the sale. Following the process backward step by step, it was found that everything paid for the manufactured product might be divided into three parts, namely:

I. **Rent** which was received by the owners of the soil from which the original materials were obtained.

II. **Wages** paid for labor expended in production.

When the manufacturer sells the product he must get both these items back again with a surplus, else he cannot continue business. The surplus is his share of the money received, and is called his profit. Thus we have a third element in the price of the product, namely—

III. **Profits**, or the share of the gross amounts realized which constitute the gains of the manufacturer or employer of labor.

This was the theory of the leading economists a generation or two ago. But it fails to satisfy the requirements of the present time. It is now seen that rent and payment for any monopolized elements of production should be included in the same class. Hence if we are to consider rent as part of such cost, we should also include everything that the owners of mines, the organizers of labor, and the possessors of material limited in supply can command over and above the ordinary wages of labor. Again, the profits of the manufacturer are really his compensation for the skill and capital which he invests in his enterprise. In so far as they are gains made by the use of his organizing powers they are products of his labor, and therefore may be considered as wages when that term is used in its most extended sense (II. 34). That portion which represents profit upon the capital invested should be considered as interest on capital. Thus profits are divisible into the two parts *wages*, or gains by labor, and *interest* on capital.

41. It is unnecessary to develop the subject from this point of view, because without greater precision the classification can serve no useful purpose. To show the difficulties in the way of a rule for estimating cost of production which shall suit every case, let us suppose the possessor of a valuable bed of iron ore who has in his employ a chemist and an engineer, each possessing extraordinary skill in conducting the processes necessary to the smelting and casting of the iron which comes from his bed. Now, the way he would estimate the cost of producing iron is this: "This bed of iron is of great value; I should have to pay two hundred thousand dollars for it" (perhaps he did pay two hundred thousand to get it). "The annual interest on this money is ten thousand dollars. I have to pay salaries of ten thousand dollars each to two scientific experts; an equal salary to a business assistant, whose services are of great value. I also have to pay great sums for the use of certain patents in the manufacture of steel. Moreover, my own organizing ability and knowledge of the business are of great

value. Since they will on the average enable me to gain a large sum per annum, forty thousand dollars or more, I therefore estimate them at that figure." Adding up all these items, he will obtain the cost of production per ton of the various kinds of iron which he turns out.

A little consideration will show us that this cost of production will, in practice and in the long-run, mean very nearly the same thing as the price he can get for his iron. For if, during a long series of years, he can command a price very much above the ordinary cost of production, it must be because he possesses a monopoly of some kind, either in the quality of his ore, the skill of his assistants, or his own knowledge and organizing abilities. Whatever this monopoly consists in, it will be valuable in proportion to the gains it enables him to secure, and its use will therefore be charged to cost of production. Nor can we stop him from doing this. He may sell out to another man all his monopolies except his own knowledge and skill, and may sell him the product of that knowledge and skill in so far as they are embodied in the organization of the work, for a sum proportioned to the gains of the establishment. Then, since the buyer has had to pay so great a sum of money, it is quite reasonable that he shall include all these items for which he has had to pay in the cost of production.

42. There is, however, another sense in which we should make an entirely different estimate. It might be claimed that it cost a man nothing to use his own faculties or to manage his own capital. If his machinery would wear out as fast in standing idle as when running, we might say that it cost him nothing to run his machinery. So it costs the land-holder nothing to rent his land. The iron ore still under ground, though it may have been sold for millions of dollars, has never cost anybody anything except the trouble of finding it. The original discoverer got a grant of it from the government; he sold his rights to some one else; the buyer sold them again, and thus they

passed from hand to hand, increasing in value as the richness of the ore became known. But this increase of value cost nobody anything more than the labor of learning the value of the ore.

We may thus form a new conception of cost of production by not counting as such cost anything except the labor which has been actually devoted by men to the production, and valuing this labor by the same standard that we value other kinds of labor. In making this new estimate we leave out of consideration everything that is paid for monopolies of any kind. We therefore take from the cost the rent of land, the money paid for the bounties of nature, the high salaries of skilled employés, and the gains which the owners make by their special skill. To distinguish this diminished cost of production from the one already described, we shall call it **net cost.**

It is now necessary to have some criterion for determining what we shall consider the net cost. Such a criterion is afforded by economic science, and may be arrived at as follows: Let us suppose the price of a commodity to gradually and continually fall from month to month and from year to year, with no hope of its ever again rising. A first approximation to the net cost of production to any individual producer, whether a person or a company, would then be the price at which the producer would abandon business entirely.

A little reflection will show that this is a legitimate definition from the second point of view just outlined. For no person or company can or will go on producing indefinitely at a loss. He may do so temporarily, hoping for prices to be higher in the future. But if they are never to be any higher, which is the case we have supposed, then the producer will immediately stop when he ceases to gain.

It is evident that this stopping-point may be far below what is estimated as cost of production by the first method. In the first place, the millions of dollars which the unfortunate owner paid for the mine do not count at all. His mine is worth to him just what he can make out of it; and it makes no difference, so far as his interests at the present time are concerned,

whether he got it for nothing or paid a million dollars for it. If he can make any money out of it he will, and if he cannot he will give it up. In the next place, as he finds his profits diminishing, he will have to inform his skilled assistants and manager that they must either submit to a reduction of their wages or allow the establisment to go out of business. The result will be the reduction of all wages to the lowest point which will suffice to retain the services of the different grades of employés. If these employés are able to use their special skill in other pursuits with equal advantage, they will soon seek for such pursuits. But it is one of the marks of monopolized skill that it cannot generally be employed advantageously in many directions. The skilled employés of all grades would therefore have to submit to a greater or less reduction. Finally, if the owner or company themselves cannot advantageously change their capital, which, as a matter of fact, they may find to be the case, they will have to be satisfied as long as they are making a fair living.

Let the reader not forget the object of this criterion for determining net cost of production. We are not showing that under any probable or conceivable circumstances would the possessors of skill and capital be thus reduced to what would seem to them penury. We are supposing an ideal state of things: one in which the possessors of monopolies would be unable to command more than if they did not possess them. We are trying to divide what is commonly called cost of production into two parts: the value of special monopolies, and what is really paid for non-monopolized labor and services. We eliminate the monopolized elements by supposing the price to diminish until those elements cease to be of special value to their owner, at least in the particular direction in which they are used. Then we have the net cost of production as it would be were the most skilful business managers and other possessors of monopolized elements brought down to the general level of their fellow-men of the same class.

43. The elements which enter into net cost of production as thus defined are:

I. *Wages*, measured on the lowest scale for which any of the persons concerned would be willing to continue work.

II. *Interest* on capital invested in the work.

III. *Taxes*, *insurance*, and other miscellaneous items incidental to production.

Whatever the producer receives for his products above the net cost of production thus defined may properly be considered as his profit. It includes the gains of himself and his immediate employés arising from their special skill, the interest on whatever money he may have sunk in the enterprise and be unable to command again, by sale or otherwise, as well as the gains from monopolies of every kind. No one knows, and no one can estimate with precision, what the profits are in any special case. We know by experience that there are certain products the prices of which are subject to great fluctuations from year to year. We also know that there are certain establishments which continue in operation through a period of years at the lowest price, without any positive hope that prices will be higher in the immediate future. If prices do finally rise, it cannot be supposed that the net cost of production rises in anything like the same proportion. We may therefore fairly suppose that when prices are high the producers are gaining a profit not necessarily equal to the whole increase of price, but certainly equal to an important fraction of it.

CHAPTER VIII.

PRESERVATION OF EQUILIBRIUM BETWEEN SUPPLY AND DEMAND.

44. Let us begin by supposing method of doing business quite different from that considered in the preceding chapters. If we visit a port in the East Indies, a trader will come on board with silks, cashmeres, and other products of the country for sale. The ship is then his market, and the passengers the buyers. But his price will not be fixed by any such considerations of the state of this market as enter into the calculations of the wholesale dealer; his only object is to get the highest possible price from each individual passenger. If one passenger would be willing to give $100 for a shawl rather than go without it, another $60, and a third only $40, the trader would endeavor to get these separate sums for the same kind of a shawl from the three separate parties. In such a case, in the absence of any communication among the different passengers, the price would be merely the result of mutual guessing; the trader trying to guess how much the passenger would give, and the passenger to guess how little the trader would take. There would therefore be no definable law to regulate the price.

So far as the willingness and state of mind of buyer and seller are concerned, the same thing may be considered as holding true in all cases. There are in the community a certain number of people who would give $20, $30, or $40 a barrel for flour rather than go without it. If their flour-dealer could keep them ignorant of the market price, he might exact this extreme limit of price for his flour. But the state of things which exists in the wholesale markets of every civilized country prevents any such operation. The general rule is that goods must be sold at the same price to all comers. A trader

who should exact a higher price because his customer chanced to be for the moment ignorant of the market price would soon lose his business standing. It is only in the case of retail and short-sighted shop-keepers that the attempt is now practised. The result is that if any commodity is offered at a certain price P, the buyers will comprise all those persons who are willing to pay either P or any higher price.

We now see from another point of view how it is that as price is lowered the demand increases. All the purchasers willing to give the higher price are retained at the lower price, and a certain number of additional ones are brought in.

45. *Graduated Cost of Production.* It has been shown that if the *net cost* of producing a commodity exceeds the price it will command in the market, its production must cease. Hence the price asked must be above the cost of production by an amount sufficient to make good all the expenses connected with the sale in the market. Since whenever the price sufficiently exceeds the cost of production to make the latter pay well, the production will be increased, it might seem to follow that the selling price could never exceed the cost of production and sale. But this conclusion does not follow as a matter of course, because it rests on the supposition that the cost of production is a fixed quantity, and that the amount produced can be increased indefinitely without increasing the cost per unit of the commodity. Were there no limit upon the quantity which could be produced at the lowest net cost, this would be true. But we have shown that monopolized elements enter, to a greater or less extent, into nearly every commodity. Since, by hypothesis, these elements are limited in supply, and are not at the command of every one, the effect of the monopoly will be with every addition to the quantity to increase the cost of each unit added.

In the case of monopolies of the raw materials of production which we have described in the last chapter, the general rule is this: A certain limited amount of the raw material can be

obtained at a comparatively low net cost from some especially favored sources. If this quantity does not suffice for the supply, then it is to be sought for from less and less favored sources, and thus each unit will cost more. This is the mark of a graduated monopoly (§§ 25, 27), which is the most common kind of monopoly. In such a case, the quantity made to sell at a price P is all that can be made at a net cost not exceeding P, just as the quantity sold has been shown to be all that could be sold at a price not below P. To illustrate this, let us see how it may be with the production of iron.

46. There may be in certain favored spots deposits of iron ore so rich in metal and so near the surface that pig-iron can be made from them at a net cost of $7 per ton. From other deposits or other portions of the same deposit the cost may be $8 per ton; in the next class in order $9; and so on until we reach a cost above any limit we choose to set.

Suppose now the market price to be $9 per ton. It is evident that all those mines from which the iron can be made at a net cost less than $9 will pay for working them. If the price rises to $10 or $12, the less favorable mines will be sought out and opened. If it falls to $8 or $7, the less favorable furnaces will have to close, temporarily or permanently. The result then would be:

I. The higher the price which can be got for the commodity the greater the quantity which will be produced.

II. The price will be equal to the cost of production from the least favored mines.

We shall hereafter see that the second rule is not the most general one. But we need not consider the exceptions to it at present. The final result of both the law of demand and the law of supply is that the price will be so fixed that supply and demand shall be equal. To show how the point of equilibrium is reached, we have supposed a state of things set forth in the table on the next page.

In the table of demand the first column is a series of prices

per ton which are chosen quite at pleasure, and from which we may suppose the wholesale dealers, or the manufacturers, to select at pleasure in order to try the effects of each separate price upon sales and production.

The second column gives the corresponding demand, that is, the number of thousand tons which it would be possible to sell at that price in a given state of the market during a given period. In order to avoid the use of large numbers we shall call 1000 tons the *unit* of quantity. We may suppose, to fix the ideas, that the market includes the whole United States, and that the period of time is one year. The first two columns then indicate that 50,000 tons can be sold in a year at $7 per ton, 48,000 at $8, and so on.

In the table of supply the first column gives a series of the various costs of production per ton.

Table of Demand.		Table of Supply.		
Selling Price.	Demand in Thousands of Tons.	Cost of Production per Ton.	Quantity which can be produced at that Cost.	Total at Cost or Lower.
$7	50	$7	10	10
8	48	8	10	20
9	46	9	13	33
10	43	10	13	45
11	40	11	15	60
12	36	12	20	80
13	33	13	20	100
14	29	14	20	120

The second column gives the quantity which we may suppose can be produced at each particular cost. That is, we suppose that 10,000 tons can be produced annually from those few favored mines which yield the product at $7 per ton; 10,000 from the next class, at $8 per ton; and so on.

The third column shows the total quantity produced at each cost or at less. It is formed by adding all the prices beside and above it in the preceding column. For example, $7 being the lowest price of all, it shows all that can be produced at that

cost. Opposite $8 we have the 10 units which can be produced at the cost of $8, and also the 10 which can be produced at $7, making a sum total of 20,000 tons at $8 or less. 12,000 tons can be produced at the cost of $9, which added to the preceding makes 32,000 tons which can be produced at the rate of $9 or less; and so to the end of the table.

Note particularly that these tables show, not what actually is done, but what can be done under certain assumed conditions, and by fixing certain arbitrary prices for iron. To see what actually would be done, suppose the selling price were fixed at $9 per ton. The dealers would then be able to dispose of their stock at the rate of 46,000 tons per annum. But since they could not afford to pay the full price at which they sold, but perhaps 10 cents less, the producers would supply them only with the 20 units which could be produced at a cost less than $9 per ton. Buying only 20 units and selling 46, the stock on hand would diminish at the rate of 26 units per annum, and the dealers would of course raise the price. At $10 per ton they would sell at the rate of 43 units per annum. But this rise of $1 would only add to the supply the 12 units which can be produced at $9 per ton, so that the supply would now be 32 units per annum and the equilibrium would not yet be restored. At $11 per ton the sales would be reduced to the rate of 40 units per annum, while the supply would be 45, the 13 units which can be produced at $10 per ton being now added. The supply would then slightly exceed the demand, so that the price under the conditions shown by the tables would be between $10 and $11 per ton.

47. *Modifications.* This is an example of the law of equilibrium in its simplest form. By comparing it with the actual case the student will readily see what modifications are to be made in it to correspond to what actually takes place. The following are the principal modifications:

I. Neither of the two tables is to be considered as invariable from year to year. The demand at a given price will be

greater in some seasons than in others, owing to the greater or less want of iron for railways or manufacturing purposes. In one year 46 units might be salable at $8 per ton, as supposed in the table, while in another year the sales at that price might be 50 units. But in any case we could make a table of the same kind as that given above which would hold good until there was a change in the demand. Every three months or every year we should need a new table.

II. The cost of production from each mine may vary in the same way with variations in the price of labor and the cost of machinery. Moreover, the quantity which can be produced at any one price is not fixed as we have supposed it, because the managers of the furnaces can to a certain extent increase or diminish their production at pleasure. If the price of iron were only $7.50 per ton, the most favored producer would have no great stimulus to manufacture for so small a profit, and therefore might make less than ten units per annum. But when the price went up to $12 per ton the large profit would stimulate him to enlarge his works and employ more labor, so that he would produce at the rate of more than ten units per annum.

On the other hand, this tendency is checked by the fact that any sudden change in the quantity produced is disadvantageous. A manager would rather run at a loss for a short time than discharge his workmen, and when the prices went up he might be unable to make any material increase of production without investing additional capital, and might not deem it worth while to make this additional investment. However these two opposing causes might operate against each other, the result would be in any case a relation of the same general character as that shown in the table. We therefore need a new table of supply as well as of demand every few months or every year. But in every state of the market there is always a possible table of the kind shown which expresses that state.

III. *Effect of Discounting the Market.* The price is fixed by the dealers and producers, not merely according to the

present state of the market, but its probable future state from the best information they can get or the best judgment they can form. If they foresee that next year a great number of railways will be built, they will be less anxious to sell now and will allow stock to accumulate on their hands for the sake of the prospective profit. But the general average result for a whole year or a series of years will not be altered (cf. § 19).

IV. In many cases there may be no dealers at all, the producers of the pig-iron selling direct to the manufacturers who use it. But this does not change the relation of things shown in the table. The functions of the dealers are then performed by the producers themselves, and since the prices are publicly known, the laws governing them are the same as when dealers fix them.

V. The modifications in the tables in case of no monopoly can readily be made. Suppose, for example, we could make a ton of pig-iron at a cost of $9 in labor, capital, and supervision; that none could be produced at a less cost, and that any required quantity could be produced at that cost. The selling price would then be between $9 and $10 no matter what the demand. The only exception to this would be that in case of a sudden increase in the demand, the price would be temporarily raised, owing to the difficulty of suddenly increasing the supply to correspond to the new state of the market, while the reverse would be true when the demand diminished.

Suppose next that the quantity were an insensitive one for which the demand varied very little from 43 units per annum, regardless of the price. The result would be that the first four orders of mines shown in the tables would be worked continually. The total amount produced would then be 45 units per annum; the selling price would be between $9 and $10 per ton, because if we place it at $9 or less the fourth class of producers would drop out, and the demand could no longer be supplied. On the other hand, if the price exceeded $10 per ton, the fifth order of producers would enter in and the total production would be 60 units per annum, or 17

units more than could be sold. Since it would be impossible to sell the entire product, some one would have to stop, and of course it would be the unwise man of the fifth class.

Combinations. In the case last supposed a combination might be made between the five classes of producers to charge $11.50 per ton and thus make it pay for the fifth man to continue the manufacture. But unless this combination included an agreement to diminish the total product *pro rata*, so as to reduce the whole amount produced to the 43 units demanded, there would be a continual accumulation on the hands of the producers. The first four orders of men would soon find it pay better to "freeze out" number five by lowering the price than to continue the combination.

QUESTIONS.

1. If, in the state of things set forth in the table of § 46, the product should be sold at $10 per ton net, what would be the profits made by the four orders who would supply the demand?

[$30,000, $20,000, $12,000, zero.]

2. The same state of things being supposed, if all the producers should combine, set the price at $12 per ton, and agree that the five orders of producers should each supply the same quantity of iron, what profits would they respectively make? [$36,000, $28,800, etc.]

3. The same table of supply holding good, let the demand for iron so increase that double the quantity could be sold at the same price; that is, 100 units at $7, 86 units at $8, etc. What would be the price and supply to produce equilibrium? [$12; 72,000 tons.]

4. From the amount of advertising done by the makers of quack medicines, can you form any idea of the relation between the net cost of production and the selling price of their nostrums?

5. Supposing the persons who use quack medicines always purchase the medicine recommended by the druggist who sells it, what effect would this habit have upon the druggist's rate of profit, upon the remuneration of his trade, and upon the number of persons who would become druggists?

6. There is free competition in the production of a commodity C, but the producers have no facilities for selling to the public, and so have to sell to a particular dealer, who can charge the public what he pleases. How will the profits be divided between the producers and this dealer?

CHAPTER IX.

EQUILIBRIUM BETWEEN SUPPLY AND DEMAND IN THE CASE OF ABSOLUTE MONOPOLIES.

48. Let us briefly review our mode of reasoning in the cases heretofore considered. We have regarded *price* as the determining cause fixing the amount both of the supply and the demand, and so fixing them that they shall be equalized. The general rule is that an increase of price not only diminishes demand, but, as shown in the last chapter, stimulates supply, so that the equilibrium can always be established by properly adjusting the price. In showing how price stimulates supply, we have hitherto considered two cases:

1. That of free and unlimited competition on equal terms, in which the supply can always be increased to meet any demand that may arise, without any increase in the net cost of producing each unit of the commodity. In this case the price is fixed by the net cost of production.

2. That of a graduated monopoly, in which there is a large competition, but not on equal terms, the favored producers having a superior command of some form of skill or natural agents. This case has been considered in the last chapter.

We have now to consider as a third case that of an absolute monopoly, held by one or a limited number of persons.

49. Let us first suppose that a single individual or company has the exclusive command of some natural requisite of production, a mine of nickel or the right to make a patented machine. Then, having the sole command of the market, such a person can fix the price at his own pleasure. The law of averages will not be applicable, nor can we by scientific method lay down an absolute law as to what he will do. He may say he wants to keep the

mine for his children, or to bequeath to them the patent-right. But although we cannot lay down a law of his action, we may assume that he will do what is most for his own interests; that is, that he will fix such a price as will in the long-run yield him the largest profit. In determining what will be the largest profit various cases arise. If the quantity of the monopolized requisite is absolutely limited, the case will be different from that of a patented machine, in which there is no limit to the number of machines that the patentee may make. It is certain that the quantity of nickel contained in the earth is limited, so that by no efforts can more than a certain number of tons ever be produced. This fact must be kept in view by the owner, who may thus be led to confine his production to a certain definite quantity per annum, no matter how high the price may rise. On the other hand, the owner of the patented machine has a motive for making as many machines as he can, subject to the condition of not bringing the price so low as to lessen his profit.

Next imagine that instead of a single person there are two. These two persons may combine with each other by an agreement not to sell below a certain fixed price. In this case the result will be the same as if they were a single person, because the two are acting in fact as a single economic agent. If they compete, that course will tend to lower the price. Whether it will reduce the price to such a point that the monopoly in itself shall become valueless depends upon the quantity demanded, the price which the consumers are willing to give, and the net cost of supplying it. Suppose, in the case of the nickel mine, that each miner is producing regularly at the rate of one thousand kilograms per annum, and making a regular profit of ϖ dollars. If he reduces the price, the demand upon him will be increased in two ways. The total amount purchased will be increased according to the first law of demand and price, and he will also attract customers from his rival. Suppose then that his rival does the same thing, and that a competition is thus established as to who sells the cheapest. Will the result

be to bring the price to the lowest paying limit? Not at all. Every increase in the supply will require additional laborers and capital, and when the competing parties find that the increase of their facilities is neutralized by the lowering of the price, neither of them will depress the price any further. Thus the two, like the one, may be expected in the long-run to fix the price at the figure which yields the largest profit.

With only two competitors we may be sure that no competition will ever last long, and that they will, either tacitly or by common agreement, fix a scale of prices, and thus act as if they were a single person. The greater the number of competitors, the more difficult it will be to have any such understanding as to price. As a matter of fact, however, it is well understood that among the great metal manufacturers of the country, and indeed among nearly all those who produce commodities on a large scale, attempts are made from time to time to establish agreements either about price or quantities produced. It is, however, difficult to make any general and precise statement on this subject, because the state of the case is constantly changing. Agreements may be formal or informal, and each party sometimes adheres to them and sometimes breaks them. New competitors come in from time to time, and thus change the basis on which agreements were made. One thing can, however, be said with certainty. The great staples of life which are really necessary to human advancement and welfare are not monopolized. For the monopolized articles the public cannot be compelled to give more than they are willing to give, and every rise of prices leads to less of the article being sold. Fortunately for the interests of mankind, absolute monopolies of insensitive products are quite exceptional.

50. The most common case of an absolute monopoly is that of patented machines. As a general rule these machines are things that people can readily go without, or find substitutes for. They are therefore to be regarded as sensitive commodities. To illustrate this, let us suppose that it is possible to sell in a cer-

tain city 100 sewing-machines of a certain patent at the price of $40 each, and that, for every dollar above $40 added to the price, there is a falling off of five machines per annum in the sales. Then at the price of $45 the sales would fall off to 75, and finally at the price of $60 nobody would buy the machines. The number salable at each price is shown in the first two columns of the following table:

Price.	Demand.	Total Amount received.	Cost.	Profit.
$40	100	$4000	$3000	$1000
45	75	3375	2250	1125
50	50	2500	1500	1000
55	25	1375	750	625
60	0	0		

The patentees can fix the price at pleasure. But, in accordance with the fundamental law of human nature on which economic science is founded, we suppose them so to fix it that they shall receive the largest income. To show how the income derived from different quantities of manufacture may be arrived at, let us suppose the cost of the machines, exclusive of interest upon the permanent original capital invested, to be $30 each. Then if the selling price is fixed at $40, the cost of the 100 machines which can be sold will be $3000, as shown in the fourth column of the table, and the profits will be $1000, as shown in the last column. If the price is raised to $45, they can sell only 75 machines; the cost of these 75 machines being $2250, the profits will be $1125. If they put the selling price at $50, they can dispose of but 50 machines annually. The cost of these machines will be $1500, and the profits will be $1000. If they put the price at $55, they will sell but 25 machines annually, which will cost them $750, and their profits will be reduced to $625. At a price of $60 they will sell no machines at all, and therefore can do no business.

To correspond to the actual case in business we should of course make allowance for the cost of selling, which in such

cases is considerable. If this cost is a constant premium on every machine sold, we have to add it to the price of the machine. If it is a percentage of what the machine sells for, we may deduct this percentage from what the machine sells for in the first column. In any case it is a simple matter to make the necessary changes in the calculation, and we need not describe the process, because our object is to show the principle involved, which will best be seen by putting the case in the simplest form as shown in the table.

Since in each case the selling price must depend upon the will of the manufacturer, we cannot lay down an absolute and necessary law about it. But, for reasons already dwelt upon, the price concluded by the political economist will be that which secures to the manufacturer the largest profit; that is, in the case supposed, it would be $45.

51. *Case in which the Supply is absolutely limited.* Not only may the whole supply of a commodity or facility be in the hands of one or a few persons or companies, but it may be incapable of increase beyond a certain definite limit. One example of this case is that of an ocean telegraph cable without other cables to compete with it. Only a certain number of words can be sent over the cable daily, and the cost will not be materially diminished by any diminution in the number sent. In this case we can establish a normal price which tends most to the public benefit, but which may not be the price most profitable to the owners of the cable. Since the lower the price the greater the number of messages, a price may be established at which messages enough will be demanded to keep the cable constantly employed. This may be called the *normal price*. Let us suppose first that the demand for sending messages is comparatively insensitive, as shown in the table on the next page.

The first column shows the price per word taken at pleasure. Opposite each price is given the supposed number of words which senders will demand to be sent at that price per day; the last column shows the total receipts.

Price per Word.	Number of Words demanded per Day.	Total Daily Receipts.
$2 40	5,000	$12,000
2 20	5,500	12,100
2 00	6,000	12,000
1 00	6,500	11,700
1 00	7,000	11,200
1 40	7,500	10,500
1 20	8,000	9,000
1 00	8,500	8,500

If the cable can send words without limit, the most profitable price per word would be about $2.20, at which price about 5500 words would be demanded, and the daily receipts would be $12,100. But suppose that not more than 5000 words can possibly be sent. Then it would be most profitable to send this maximum number and keep the cable constantly employed. The price leading to this result would be $2.40. Suppose, however, that if the company pleased it could send 8000 words per day and no more. Then it would be most for the public benefit to fix the price at $1.20 per word, at which price the cable would be constantly employed. But the daily receipts would be only $9600.

The price actually charged might range anywhere between the extremes $1.20, the normal price, and $2.30, the price most remunerative to the company. If the company is chartered by the government and receives favors from it, the normal price is that which should be fixed, provided the company is willing to lay the cable on that condition.

The question may be asked: Suppose the company can make a profit by sending the messages at $1, or even 80 cents, per word; would it not be better for the public to fix the rate at this lower price? The answer of the economist is, No. By hypothesis, the company can only send 8000 words per day. If the price is fixed at 80 cents, people will be coming in with 9000 words per day, so that there will be 1000 which cannot possibly be sent. In this case a selection must be made. On what principle shall we select the 8000 which are to be sent from the

9000 demanded? Clearly the answer is that we should select the 8000 which are the most important. But how shall we determine which are the most important? Sentimentality aside, there is but one possible way. The most important messages are those for which the senders are willing to pay the most. Hence the only course would be to find the senders of those 8000 words who are willing to pay the price of $1.20 per word. The only way of doing this is to charge $1.20 and to let the senders of the 1000 words who are not willing to pay this price give way to the others. No injustice is thus done, because no one need pay money unless the service is worth it, and it is perfectly right that those persons to whom the service is worth less than $1.20 per word should give way to those to whom it is worth more.

Another case of limited supply is that of the seats at theatres and other places of public amusement. There are, of course, only a certain definite number of seats at such places. The price of tickets may be so low that more people will demand them than can be supplied with seats, and they may be so high that many seats will be left empty. The normal price is that at which the demand will be just equal to the number of seats, and the general good is best subserved by this price. But this normal price will vary from time to time according to circumstances, rising higher when a celebrated actor is to appear, and falling when nothing of especial interest is presented. If the price be put much below the normal price, the tickets will be purchased by speculators with a reasonable probability of selling them again at a profitable advance.

The professional services of the lawyer or physician come under the same category. The physician can properly attend only a limited number of cases. If his fees are below a certain amount, which depends upon his reputation, the demand for his services will be greater than he can supply. If his charges are too high, he will remain a greater or less portion of the day idle. The normal price is that at which the demand will be equal to his power of attending patients.

CHAPTER X.

INTERNATIONAL SUPPLY AND DEMAND.

52. The operations of international supply and demand are governed by the same general principles with those which govern home supply and demand. The differences between the productive capacities of different countries are of the same general nature as between different iron or coal mines. There are, however, certain modifications in the application of these principles of which the following is the one chiefly to be considered. In domestic trade and manufacture laborers can pass from one establishment to another, and capital can pass from one employment to another, with comparative freedom. The various machine-shops and railways compete with each other in the price they offer for goods and the wages they offer to their employés. We may thus imagine a certain level or equilibrium between the different employments in a country. Any disturbance of this equilibrium will very soon be corrected. Thus each country, considered separately, will enjoy this equilibrium within its own limits.

But it does not follow that the equilibrium will hold between different countries. There is no competition between a farm-hand in China and one in the United States, and therefore no tendency to an equality of wages between them.

53. Let us now suppose a number of countries in each of which an industrial organization of its own has grown up, but which have never had any communication with each other. To make this supposed case merge as nearly as possible into the real one, we shall suppose that these different countries all use the same kind of money; which money, for simplicity, we may call gold. Then there will be in each country a certain scale of prices for all the commodities it produces; and this

scale will be determined in each case by the laws of equilibrium between supply and demand which have already been laid down. Suppose now that some two of these countries discover each other, and that free communication is opened up between them. Of course absolutely free communication is not practicable, because labor is required to transport goods across the ocean or other intervening region. For the sake of simplicity, however, we may first suppose transportation to cost nothing. To begin with an extreme case, let it be found that the prices in gold of all commodities in one country are higher than in the other. The country of higher prices will then begin by making all its purchases from the cheaper country, paying for them in gold. The result will be a scarcity of gold in the one country and a plenty in the other. This will result in a fall of prices in the one and a rise in the other, until the two scales are brought into approximation (§ 21).

Of course the general inequality of prices which we have just supposed is something which never exists under our present arrangements; because, as a matter of fact, communication between countries has always been more or less free, and thus no general inequality between the scale of prices in different countries has ever had a chance to exist. In other words, the equilibrium to which, in the state of things which we have supposed, the prices would ultimately attain is that to which they really do approximate, so far at least as concerns those goods which pass between the two countries.

The question now is where the excess of purchases by the dearer country would stop. We suppose that everybody in each country buys where he can get his goods the cheapest. So long as this mode of buying results in a greater value of goods being conveyed from A to B than is conveyed in the reverse direction, so long will gold to pay for them continue to flow out of B into A, and so long will prices continue to fall in B and to rise in A. This rise and fall will stop as soon as equal values are transported in each direction between the two countries.

54. *Relative Advantages of Different Countries in Production.* If, when an equilibrium is reached, the price of each individual commodity is the same in the two countries, all trade between them will cease, because there will be no inducement to transport goods from one to the other. The prices will be equal unless one country has a relative advantage over the other in the production of special commodities. An example of what is meant by *relative* advantage is this: If in each country the cost of producing ten yards of cotton is the same as that of producing one bushel of wheat, then, no matter what that cost is, neither country will have any advantage in the relative production of wheat and cotton. It may cost twice as much to produce both the wheat and the cotton in one country that it does in the other, but in this case the advantage is an absolute and not a relative one. If it costs just twice as much labor to produce each separate commodity in one country that it did in the other, there would be no relative advantage between any two commodities, and therefore, in the case supposed, no trade between the countries. Wages of all kinds would be twice as high in the more favored country, but this would not lead to any trade or competition. There would be, indeed, an inducement to emigrate from the less favored country to the other, which tendency would, however, execute itself with comparative slowness, owing to the indisposition on the part of men to change their country. We have therefore, in our present discussion, nothing to do with the general advantage of one country over another in production, but only with its relative advantage in producing one commodity rather than another.

From what has been said we see that this relative advantage would, in the case of free trade between the two countries, be indicated not only by the relative prices of different commodities, but by their actual prices. If wheat is cheaper in America than in England, it shows that we have a relative advantage in producing wheat over producing the common run of commodities which are transported between the two countries; while if iron is cheaper in England, it shows that England has a relative

advantage in the production of iron. But this fact gives us no clue to the rate of wages in the two countries, which may differ to any extent without impairing the equilibrium of prices. The exchanges between the two countries show that America has a relative advantage over England in the production of breadstuffs, pork, cattle, cotton, leather, tobacco, and some dairy products. England has a relative advantage in the production of spool-thread, woollen goods, and a great variety of manufactures of small articles in common household and family use. The result is a continual flow of the former in one direction over the ocean, and of the latter in the other direction.

55. *Balance of Trade by Foreign Exchange.* In a former chapter it was shown how international trade is balanced by the use of foreign exchange on the part of bankers (II. 95). If the value of our imports from England exceeds that of our exports to that country, there will be, as already shown, a demand in the New York market for exchange on London in excess of the supply. In accordance with the common law of supply and demand, the New York bankers will then raise the price of exchange on London. The question now arises to what limit the price may rise. The answer is that the limit is determined by the fact that the New York debtor has always the privilege of making payment by sending coin across the Atlantic. If then the premium charged by the bank is in excess of the cost of freight and insurance, coin or bullion will be exported. The ratio between the amounts of metal in the English pound and the American gold dollar are such that the bullion value of the former is $4.86 65. It is found by experience that when the New York bankers charge a higher price than $4.90 for exchange on London our merchants begin to export bullion. Perhaps at a rate one cent above this, all payments would be made in bullion and no foreign exchange would be bought. The gold will flow out in payment until the fall in prices consequent upon the outflow stimulates the exportation of other commodities than gold, and then the balance will be restored.

Suppose, on the other hand, that our exports are in excess of our imports. Then the merchants in New York who possess credits in London will exceed those who owe debts there. Thus the supply of foreign exchange by the former will exceed the demands of the latter, and the bankers will find exchange on London accumulating on their hands. In accordance with the law of supply and demand, they will lower the price in order to stimulate demand and discourage the supply. The limit will, however, be reached on the same principle as in the opposite case. Whenever the price offered by the banker falls so low that it will pay the New York creditor better to ask his London debtor to send coin across the Atlantic than it will to sell the debt, then coin will begin to come. This limit of price ranges from $4.83 to $4.84. If the excess of imports continues, the inflow of coin will result in an increased volume of currency on this side of the Atlantic, which will lead to a rise in prices and thus stimulate importations from abroad.

Of course the flow of gold from England will tend to make prices low there and thus stimulate exports to America. Thus the foreign exchanges both of gold and commodities always tend towards an equilibrium which, however, is continually being disturbed through the action of changing economic causes in each country. For a few weeks or months there will be an excess of imports, followed by a corresponding demand for foreign exchange or for gold to send abroad, while at other times the state of things is the opposite.

The one condition which is always to be fulfilled to produce equilibrium is that equal values shall pass in the two directions. It does not follow either that equal weights or equal numbers of different kinds of commodities shall pass. One country may have a great advantage in the production of a single commodity and no more. If wheat is the commodity which we can produce to the greatest relative advantage, and if the quantity which we can produce is sufficient to buy our whole supply of those foreign commodities in the production of which other nations have a relative advantage, then we

should export nothing but wheat. The people of Switzerland, by a system of training extending through many generations, have acquired a great advantage in the manufacture of watches. The result is that little except watches is exported from that country in exchange for many kinds of products imported.

56. *Tax and Cost of Transportation.* In the preceding discussion we have supposed transportation to cost nothing, and trade to be perfectly free. We have now to inquire how our conclusions must be modified when we allow for the cost of transportation and for the duties which have to be paid on imports. As a result of this cause the relative prices of commodities will always be higher in the country to which they are exported, and as a consequence equal values according to the scale of prices in each country cannot pass. If, for example, the imports into New York should equal the exports in value, then it is certain that those imports are worth less when they leave England than when they are landed in New York. And because the exports are worth more when they reach England, it follows that, as measured in England, the value of the imports would be in excess. How then is the equilibrium to be defined?

To answer this question, let us suppose that both exports and imports are carried in foreign ships to and from the port of New York. Then in order that the accounts of the New York merchants with other foreign correspondents may be accurately balanced, it is necessary that the value of the goods as received from the ship shall equal the value of those exported, at the price paid in New York by the London purchaser of the exports. Let us call this equal quantity P. Then when this value P of exports reaches London it will be valued at a higher price, the addition being represented by all the cost of transportation, insurance, and interest on capital. If this cost be D, the value delivered in London will be $P+D$. If the cost of sending the goods back from London in payment be H, then it is only necessary to send the value $P-H$ from

London in order to make the value P in New York. Thus as measured in London the value of the imports will exceed that of the exports by D + H. This quantity D + H will represent the total cost to the English shipper of carrying the goods in both directions, including all profits upon the transaction. If the cost of transportation were entirely incurred by the New York dealers, the result would be that to balance the account the exports and imports should be equal as valued in England, while the imports would be in excess as valued in New York. It is therefore practically impossible to strike a mathematically exact balance in the case. In theory, however, the balance is obtained by subtracting from the price of the imports the sums paid by the importer for the cost of transportation, and adding to the cost of exports whatever he pays towards transporting them. Modifying the sides of the account in this way, the exports and imports should balance on both sides, provided no gold is to be transported in either direction.

57. We thus reach a very simple theorem concerning the balance of foreign trade. Since the excess of imports into each country must be paid for in coin, it follows that if we include the value of the coin or bullion paid with that of the exports, and if we include coin and bullion among the imports, then the sum total of imports and exports must in the long-run balance each other. This qualification "in the long-run" is important, because there is no necessity that the balance should be struck every day or every month, or even every year. A nation may go on for some time increasing its debts abroad simply by the home merchants deferring payment. Thus there is always a fluctuating mass of indebtedness from the merchants of one country to those of another which may sometimes go on increasing for years. As a general rule, however, this indebtedness does not increase indefinitely, but is being paid off from time to time. If it has grown in one year, it probably will diminish in the year following.

Of course the supply and demand for foreign exchange cor-

responds to the *payment* of indebtedness on the two sides, and not to its being incurred. That is to say, a New York importer does not demand foreign exchange when he becomes indebted to his London correspondent, but when he has to pay that indebtedness.

58. Although the preceding theory is exact when we make all due modifications in its application, yet the student must be warned against supposing that any official statement of the total values of imports and exports will accurately represent the theory. The precise value of goods is always indefinite, and becomes necessarily greater with every step the goods take towards their destination. A bale of cotton is worth more on board a ship in Charleston harbor than it was on the wharf. And a bale of broadcloth, when brought to New York, is worth more after being landed on the wharf than while it was in the ship. The prices of goods also fluctuate from day to day, and it would be impossible to formulate any system which would be exact from an economical point of view, without an examination of every merchant's ledger to find what all his imports actually cost him in every way. For this reason statistical tables of the values of imports and exports are not to be regarded as mathematically exact, but only as rude approximations to the actual values.

In the case of gold and silver bullion, however, the numbers may be regarded as sufficiently exact for all practical purposes, and they afford the best test of the actual balance of trade. If during a series of years we find that more gold is exported from any country than is imported, we may conclude that there is a corresponding excess to the home value of imports of other goods, and *vice versa*. But even in this case the completeness of the tables is always open to challenge. Coin and bullion may be imported by passengers arriving from abroad without being reported to the authorities, and the principles of economics may settle the question of the balance of trade better than statistics.

59. ***Total Balance of Trade with all Countries.*** Hitherto we have considered interchange between two countries only. But it does not at all follow that the value of our imports from any one country must equal that of the goods which we return to it. During the year 1883–4, for example, our imports from Brazil were 50 millions of dollars, while our exports to Brazil were only 9 millions. Our trade with France, Austria, and the East Indies and many other countries shows an excess of the same kind. On the other hand, our imports from Great Britain were 163 millions, and our exports to that country were 386 millions. This, however, forms no exception to the rule when we extend the latter to include sums total. Our total imports from all countries were valued at 668 millions, and our total exports at 740 millions. This difference is partly to be attributed to the defects of the official system of valuation, partly to the indebtedness incurred by foreigners to our merchants, and partly to the profits gained by the latter through the exchange. The inequalities in the relations of the different countries are accounted for by England paying Brazil and France for what they export from those countries, and charging it against the value of what she receives from us. The case is exactly the same as between individuals. If A purchases from B, B from C, and C from A, and the values are equal, the commodities are paid for by simply cancelling the accounts without any money passing between the parties. The operation is, in principle, identical with the balancing of bank indebtedness at a clearing-house (II. 92).

60. ***Theories and Nomenclature of the Balance of Trade.*** When it is found that the total value of the goods imported into a country exceeds the total value of those which it exports in exchange, the balance of trade is said to be *against* that country. This form of expression may surprise the young economist, since it implies that a nation is more favorably situated the greater the value of the goods which it sends abroad and the less the value which it receives in payment.

It is a relic of the old "mercantile system" of two centuries ago, and is based on two principles then in vogue.

The first of these principles was that a nation was rich in proportion to the amount of gold and silver which it possessed. Accordingly, the policy of the leading mercantile countries was shaped by a constant effort to get as much of these metals as possible into the country, and to prevent them from leaving it. Since, as just shown, the metals would be received in payment for any excess of exports over imports, it was considered that an excess of exports encouraged the importation of money, while the opposite state of things implied its exportation.

The second principle was that a nation was impoverished in proportion to the amount of labor expended on any imported product by the foreign producer. For example, when it was found that a product which only cost an English manufacturer one day's labor could be sold in Portugal for two or three days' labor of a Portuguese, it was held that the exchange was disadvantageous to England. This principle combined its force with the other in leading governments to look unfavorably on an excess in the value of their imports.

At the present time the expression "favorable balance of trade" implies to those who use it an increasing indebtedness from foreign countries. It is not a good thing to be in debt, but it is supposed to be a good thing to have others indebted to us. Statesmen like to see our exports exceed our imports, because that seems to imply either that our indebtedness is being paid off, or that foreigners are running in debt to us. Since, however, this indebtedness is not public, but private, the parties can be safely left to take care of it for themselves.

In the long-run the relation of the export to the import of the precious metals to and from any country must depend on whether that country is a large producer of them. A considerable part of the annual gold-supply of the world comes from California and Australia. These countries may therefore in the long-run be supposed to export more gold than they import, because the supply tends to diffuse itself over the world in proportion to the needs of different countries.

61. ***Advantages of International Trade.*** The advantages of international trade are that the people of each country have a larger field from which to supply their wants than they would have were they to depend entirely upon their own resources. If all countries were alike in their productive capacities, no international trade would arise. The inequalities which give rise to trade are both natural and artificial. In trade, countries share these advantages with each other. For example, it is found that there are certain kinds of foreign wool which when mixed with American wool will make a far better cloth than the latter will make alone. By importing this wool we make our own more valuable. It is also found in metallurgy that there are certain foreign ores the addition of which to our own greatly facilitates the process of manufacture. Our metallurgists therefore seek for these foreign commodities. Nearly all the platinum of the world is found in or around the Ural Mountains. If it could not be exported, no other nation than Russia would have the use of it.

The principle is the same in the case of artificial powers or products. Our inventors have by peculiar skill and application brought the sewing-machine to great perfection. Without foreign trade the advantage of the skill that they have acquired in making these instruments would be enjoyed only by ourselves. But by exporting these machines other nations share these benefits with us. Our cotton helps to clothe the whole world, and our breadstuffs to feed large portions of it. In return for this we get the benefit of any peculiar skill that may be acquired by the inhabitants of any other countries. The products of Chinese and Japanese art are found in many of our houses. The skill acquired by the English manufacturer of cloth is available to clothe us. The mere fact that a country is less rich in natural wealth than another may make its services available. No civilized country is so poor that it cannot in some way assist us in supplying our wants. As the poorest classes among us can perform menial services for us more advantageously than we can perform them for ourselves, so the

inhabitants of countries less fortunately situated than our own are ready to supply us with many commodities more cheaply than we can afford to make them for ourselves. As some people are so wealthy as to command nearly everything they want without irksome labor, so we might imagine a country so rich in natural wealth as to have most of its wants requiring disagreeable labor supplied by its neighbors. In a word, the social organism does not comprise the people of one country alone, but of the whole civilized world, who are all engaged in supplying each other's wants.

ILLUSTRATIONS AND EXERCISES.

1. Investigate the effect of the following causes upon the price of exchange on London in the city of New York, showing in each case whether the effect will be to make exchange dear or cheap for the time:

I. During a period of one year American merchants import more goods from England than they export, but run in debt for the excess.

II. During the year following they pay off this indebtedness.

III. Owing to the rate of interest being higher than in Europe, London capitalists invest in American securities.

IV. Owing to the rate of interest being higher in London, American investors purchase British securities.

V. A war in Europe leads the contending parties to purchase large supplies of food, military accoutrements, and weapons from the United States.

IV. In consequence of goods being dearer in Europe than in America the exports from America largely exceed the imports.

VII. The quantity of gold mined in America is in excess of our own wants, and is therefore regularly exported to London.

VIII. The mining of gold and silver diminishes so that we have to import bullion from London.

2. Consider the great difference between the natural advantages of different countries for the production of the great staples of life. Name several such staples which can be produced advantageously only in certain countries. Also name, so far as you can, those commodities which can be produced as well in one place as in another. Then show in what countries will people most devote themselves to the production of this last class of commodities, and illustrate your theory by such instances as you are acquainted with. Can you thus explain the fact that there are many commodities which will not be made at all in the United States, unless their importation from abroad is impeded by a protective tariff?

CHAPTER XI.

EFFECT OF TAXES ON PRODUCTION UPON SUPPLY, DEMAND, AND INTERNATIONAL TRADE.

62. The general policy of different forms of taxation, that is, the consideration of the effect of taxes upon the interests of society, belongs to the application rather than to the theory of economics. At the same time, a tax levied by government is an economical cause, the effects of which are to be investigated by the same methods that we employ in the investigation of other causes. The consideration of taxes is therefore a legitimate branch of pure economics, which we shall now enter upon so far as necessary for the purpose of rounding out the subject.

The only taxes which we need consider for the present purpose are those levied upon production; that is, the taxes which a producer may be obliged to pay as a consequence of having added to wealth. Since transportation is an act of production, it follows that import duties are to be included in our list. As a matter of fact, import duties are the only taxes upon production which are at all popular. But most governments are obliged also to levy taxes upon particular home products, especially alcoholic liquors and tobacco. All such taxes produce their effect through the laws of supply and demand, and the method of investigation is the same in all.

63. To begin with a simple case, let us suppose that a country has, up to a certain point, had no occasion to levy a tax upon tobacco. A necessity for increasing the revenue arises, and the government determines to levy a tax on all tobacco produced. Let this tax be fixed by a percentage of the value of the tobacco, and, for convenience, let us suppose it to be payable when the tobacco is produced.

Now, the first conclusion we draw is that the immediate economic effect of the tax is the same as that of an increase in the cost of producing tobacco. For, so far as the producer of tobacco is concerned, it makes no difference to him whether the money which he pays goes as tax to the government, or to some land-owner or laborer who helps him in his work. In both cases it is a sum which he has to pay out as a condition of producing, and is therefore regarded by him as an addition to the cost of production. The question now is, What change will this tax produce in the supply and the demand? The first factor in the case will be the producer, with whom therefore we commence to trace out the effect.

It is certain that the first thing that the producer will attempt will be to add the tax to the price at which he sells his tobacco. This addition must be made by all through whose hands the article passes, and thus the consumer of tobacco will find an attempt to charge him a higher price for it. Now two cases may occur, depending on whether tobacco is or is not an insensitive commodity.

If tobacco is an *insensitive commodity* (§ 15), that is to say, if the consumer will buy as much at the higher price as he formerly bought at the lower price, then no further change will occur in the conditions. The manufacturer and seller of the tobacco, finding this same demand under the increased price as they did before the tax was levied, will go on manufacturing the same quantity as before, and will make the same net profits. We may therefore lay down the law:

A tax upon an entirely insensitive product is wholly paid by the consumer, no matter what the conditions of production.

64. But the case of an absolutely insensitive product is an extreme one, which we can hardly consider to have an actual occurrence. It is certain that some people will economize in the use of tobacco or any other product when the price is high. Then when the seller finds the amount demanded to fall off in consequence of the increased price, we have a cause which

we must trace back to the producer. The consumer buying less, the producer finds that he cannot sell the same amount as before. He must therefore do one of two things: (1) diminish his production, or (2) lower his price, thus taking a part of the tax upon himself. Which course he will take depends upon the conditions under which he produces, and especially upon whether monopolized elements enter into the production.

If there is no monopoly, then it is to be assumed that, before the taxes were levied, the competition of producers had resulted in the tobacco being sold at the lowest price which would induce any person to engage in its production. This being the case, the producers could not all afford to go on producing as before, and still pay a part of the tax. There must therefore be a diminution, those least able to bear the additional burden going out of business, and the others diminishing their production. This diminution must, in the case supposed, go on until the rise in prices caused by the increased scarcity becomes nearly equal to the tax. We have therefore as a second law:

The tax levied upon a commodity into which no monopolized elements enter is entirely paid by the consumer.

65. Suppose next that a monopolized element does enter; for example, that certain soils are much better adapted to raising tobacco than to any other purpose, and would command a much higher rental than they would if the production of tobacco were stopped. If the cultivators of such soils leave off raising tobacco, they will be subject to a greater or less loss of income. Therefore rather than do so they will lower the price; that is, they will pay a portion of the tax themselves. To correspond to the actual case we must suppose a graduated monopoly, some soils having no special advantage in raising tobacco, and others having a great advantage. The former will now be devoted to the cultivation of some other product when the tax is levied, while the owners of the latter will pay a portion of the tax. We therefore reach the conclusion:

A tax upon a sensitive commodity into which monopolized elements enter is divided between the producer and the consumer.

66. A fourth case may be considered possible, namely, that in which a consumer will not pay any increase of price whatever. Let us then suppose that, from any cause, when the seller of tobacco raises the price, he finds that his customers will not buy any at all, and that he must either continue to sell at the old price or go out of business. The knowledge of this fact will go back through the channels of trade to the producer, who must then take his chance of selling at the same price as before or giving up production. If he can better afford to pay the whole tax than to go into some other business, he will do so. If he cannot, he must stop producing tobacco entirely. Hence we have a fourth law:

If a commodity cannot be sold at all above a certain price, a tax upon it must be paid entirely by the producer.

This case can hardly arise unless a commodity is very sensitive in consequence of some substitute for it being readily obtainable. Then if this substitute is untaxed, the effect of the tax may be to stop the production of the taxed commodity entirely.

67. *Taxes on International Trade.* If an import duty be levied, the home and foreign production of the article imported will be changed in accordance with laws founded on those first principles which have just been enunciated. A much greater complexity of circumstances may, however, enter, depending upon the variety of sources from which both the foreign and domestic supply of the commodity may be obtained. In domestic taxation we had to consider only a single class of producers, or at most a single graduation of the monopoly. But most largely imported products may be obtained from several countries, where they are produced under very different conditions; we must therefore see how the preceding principles

will apply to these various conditions which may be found to exist. If there were a commodity C which could be produced only in England, and which none but Americans consumed, then an import duty levied by America upon C would either be paid wholly by American consumers, or divided between the American consumer and the British producer in exact accordance with the laws already laid down. That is, the tax on an insensitive product, or on a product of which no producer in England had any monopoly, would be paid entirely by the American consumers. As the product, on the one hand, became sensitive, or, on the other hand, as the production was monopolized, the British producer would have to lower his price in order to induce the Americans to continue their importation.

This simple case is, however, an extreme one. As a matter of fact almost every commodity can be and is, to a greater or less extent, produced by ourselves. This fact brings in a case which cannot arise in domestic taxation, namely, that of an untaxed home product competing with the taxed foreign product. Hence the laws governing the case will be more complex than in the case of domestic taxation.

68. A yet further difference in the two cases arises from the fact that the British producer has other nations to whom he can sell, and who perhaps do not levy the same tariff that the United States does. To show how these two differences modify the result, let us take the case of writing-paper. Suppose that under free trade a certain amount Q of writing-paper would be annually imported from abroad and a certain other quantity H produced at home. Let a duty then be levied upon the foreign paper. We may suppose that the foreign manufacturer would at first endeavor to throw the payment of the entire duty upon the American consumer. The latter would then be charged a higher price for his paper. The result would be an attempt on his part to economize in the use of paper and to prefer the domestic product. The immediate result would therefore be an increased demand upon the American manu-

facturer for paper. This would lead to a rise in the price of the home product. The effect of this upon home production would depend upon the extent to which monopolized elements enter into the manufacture of paper, the effect being determined by the laws already laid down in treating of monopolies.

If no monopoly either in skill or material existed, so that large numbers of men could make paper as advantageously as the most experienced makers, then this higher price would stimulate the manufacture of paper. The rise in the price would be checked, and the American consumer, getting his supplies at home, would greatly diminish his demand for the foreign product.

We must now trace the reaction of this diminished demand upon the foreign producer. If no monopolized elements enter into the foreign product, then the foreign producer, making no more than the regular profit, could not afford to lower his price in order to stimulate the declining demand. If he had no demand except what came from America, those who were least able would have to go out of business, as in the case of home taxation. Just here, however, the difference arises. The English manufacturer has not only America, but his own country and the rest of the world, as possible buyers of his product. Hence by lowering the price in a degree very slight compared with the duty, he may recover from other sources of demand what he has lost in the American demand. He will not therefore be obliged to bear any considerable portion of the tax levied by America. This conclusion may be generalized as follows:

If the greater part of the supply of some special commodity produced in one country is consumed in another country, then a duty levied by the consuming country may have to be partly borne by the producer. But in the more common case in which there are many home and foreign consumers of the commodity, then either a duty levied must be paid entirely by the consumers of the country which levies the duty, or the importation of the commodity must cease.

69. The effect just described upon the foreign producers was deduced on the supposition of a non-monopolized home production. If, however, the home production is monopolized, then the increased home demand consequent upon the duty will not be entirely met by increased home production, but by increased home price. The owners of the monopolized elements will be able to command a higher price for their services. The consumer will therefore have to pay a higher price whether he purchase the home or foreign product. For a yet stronger reason than before, the foreign producer will have no motive for materially diminishing his price. One result will be a diminution in the consumption of paper; another will be an increase in the ability of the home producer to command a price for his monopoly.

We thus see that an import duty upon products into which monopolized elements enter gives an immediate value to those elements which they would not otherwise have. Suppose, for example, that in consequence of inherent capacity and natural aptitude I have acquired a peculiar skill in making a very elegant style of paper at a very small cost to myself. So long as I am subject to the competition of equally gifted foreigners I may be unable to command more than a moderate price for my paper. If, however, I can induce the government to levy an import duty on this particular kind of paper which I alone in this country can make to the best advantage, then I can raise the price either to the highest limit which people are willing to pay, or to the cost of production by less favored persons. That is, by the aid of the tariff I shall be able to command for my skill a higher price from my fellow-citizens who want the paper, while my government may not be able to collect any increased revenue from foreign importations, because the diminution of imports may compensate for the increase of duty.

If, on the other hand, there are an unlimited number of my countrymen who are as well qualified to make this peculiar paper as I am, then a tariff will not benefit me, since, in any case, I am then subject to unlimited competition.

70. ***Effect of Import Duties on the Balance of Trade.*** From the considerations in the last chapter it follows that international trade is determined by production and relative prices in the two countries, combined with cost of transportation, customs duties, and other expenses incident to the exchange. The final conclusion to which we are led will be most clearly seen by taking the prices in some one country as a standard of comparison. Let us then consider a *unit* of any commodity produced in the United States to mean *one dollar's worth*, as determined by the wholesale price in New York. Suppose, to fix the ideas, that in Liverpool these unit quantities of different commodities have the values shown in the following table. The numbers in the table are supposed to be the quotient of the price in Liverpool divided by the price in New York.

Cotton	$1.25
Wheat	1.20
Leather	1.15
Petroleum	1.10
Beef	1.00
Cloth	0.95
Linen	0.90
Iron	0.85
Silk	0.80
Tin	0.80
Wool	0.75

Suppose that in this state of things transportation cost nothing and trade were free. Then it is evident that cotton, wheat, leather, and petroleum would be exported from New York to Liverpool, while cloth and all the articles below it on the list would be imported. If the values of these exports balanced that of the imports, trade would continue on this basis, though prices might be brought more nearly to a level. But suppose that our exported articles exceeded in value those imported. The result would be an influx of coin to pay for them, and a consequent rise of prices in this country. There would then be less cotton, less wheat, less leather, etc., in a dollar's worth, so that the home prices of these articles would be brought more

nearly to an equality with those abroad. The result would be a diminution in the exports of those articles, and an increased importation of articles which it did not before pay to import. The equilibrium would be reached when a sufficient supply of articles imported from the bottom of the list was taken to balance those exported from the top of the list.

Suppose, secondly, that we consider the cost of transportation. This will depend, not upon the value of the product, but upon its weight and bulk. It will prevent trade in those commodities the prices of which in the two countries do not differ by enough to pay the cost of transportation.

Let us suppose, next, that an import duty of 50 per cent *ad valorem* upon all foreign products is levied by each country. If the above scale of prices continued to hold, all trade would be stopped by this duty.

Suppose, however, that the duty was levied only by one country, say America. If the scale of prices were unchanged, there could be no imports to pay for the exports, because the duty would raise the price of all foreign products, even that of wool, above the home price. Since, however, our cotton, wheat, and other commodities are, by hypothesis, admitted free in Liverpool, the exports of those commodities would continue, and would for the time be paid for in gold. The result of this influx of gold would be a general rise of prices in this country (§ 21). Let us now trace the effects of this rise.

When it reached 10 per cent the export of petroleum would cease; at 15 per cent, that of leather; at 20 per cent, that of wheat; at 25 per cent, should it reach that limit, that of cotton. For we can export nothing unless the foreign exceeds the home price, and each of these percentages is the excess of the foreign price before the inflow of gold began.

To see whether this prohibitory limit would be reached, let us consider the articles at the bottom of the scale. The foreign price of iron being 85 cents, the duty of 50 per cent would raise its cost to us, when imported, to $1.27½. We should therefore import none, even after the rise in prices. The

price of foreign silk, with duty added, would be $1.20. Hence, when the home scale of prices rose to more than 20 per cent, we should begin to import silk, tin, and wool, but should export nothing but cotton. The reduced annual imports and exports would then balance each other at a rise of between 20 and 25 per cent in the scale of prices.

Studying the preceding case, we see that the reason trade would continue is that the foreign relative price of the three articles at the bottom of the list increased by 50 per cent, the amount of the duty, is still less than the relative foreign price of cotton at the top of the list. Had the duty been 60 per cent, nothing but wool could have been imported, and 70 per cent would have stopped all trade. Our conclusions are:

I. *The first and immediate effect of a newly levied ad valorem import duty is to raise the scale of prices in the country which levies it.*

II. *The ultimate effect, after equilibrium is reached, is to stop all foreign trade except in those commodities whose relative cost of production in the two countries differs by a greater percentage than that of the duty.*

III. *The import duty cannot permanently impair the equality of values imported and exported, and must therefore diminish the one as much as the other.*

71. The question may arise whether by increasing the duty on the articles at the bottom of the list a state of things could not be brought about in which the home supply would all be made in this country and nothing would be imported. To answer this question, let us suppose the attempt successful. We should then have a continual export of wheat, cotton, and other commodities which would have to be paid for. If the duties are so high that the exports are not paid for in goods, they would have to be paid for in money. Thus would arise a continual increase in the volume of the currency, accompanied by an increase in the price. This increase could never stop until the influx of gold was stopped by our exports being paid for in goods.

It must be remembered that this increase of price would not be confined to imported articles, but would affect the wheat and cotton exported. When the price of these articles became as high as they were abroad, then their export would necessarily cease, and thus we should have an end of all trade. We therefore reach the conclusion,

By no device of levying duties can we permanently prevent the imports and exports from balancing each other.

EXERCISES.

1. If a personal tax should be levied on all persons having red hair, could those persons charge a higher price for their services in consequence? What would be the effect of such a tax?

2. In a community where grocers have to purchase a license to carry on their business, can they charge a higher price for their goods in consequence? In what manner is the equilibrium restored if disturbed by such a tax?

If a tax is levied upon an income derived from patents, can the person taxed collect it from others by charging a higher price?

3. Show the error of the following reasoning: The monopolist is the very person who can best afford to be taxed. For, since he has a monopoly, he can charge what price he pleases for his monopolized products, and can therefore collect the entire tax from his customers by raising the price of those products. (Cf. § 65.)

4. Show more explicitly than is done in § 54 that there can be no trade between two countries, how great soever the difference of their general producing capacities, if the relative producing capacities are the same for all commodities. Put the hypothesis in this shape: Of the various necessaries of life—

Country A produces the quantities M, N, P, Q, etc., per man.

Country B produces the quantities ½ M, ½ N, ½ P, ½ Q, etc., per man.

5. Apply the proposition that a tax on production has the same effect as an increase of the cost of production to the case of international trade. Is there any difference between the economic effects of an import duty and an increase in the cost of ocean transportation arising from an increase in the price of coal?

6. What would be the economic effect of a tax of ten per cent of the gate-money at all horse-races?

* 7. If so heavy a tax should be levied on the home manufacture of

* The student will be better able to grapple with the questions marked by an asterisk after he has been through the next book, and he should then return to them.

paper as to entirely stop its production, while the foreign article was admitted free, would there arise any increased demand for other home products to compensate for the loss of the paper?

8. Show under what conditions the following may be true: "We may often, by trading with foreigners, obtain their commodities at a smaller expense of labor and capital than they cost to the foreigners themselves." If you have any difficulty, consider how much of the labor of a hod-carrier an eminent lawyer can command by an hour's work.

9. If the farmers of the United States could raise cotton in unlimited quantities at a cost of two cents a pound, what effect would this have upon the industry and foreign exchanges of the country? What would be the benefit to the world at large?

*10. If English operatives should lose their skill, and their capitalists cease to manufacture, in what way would our interests be affected?

11. Are there any American manufactures whose production requires monopolized elements, and which under the influence of an import duty will be sold abroad cheaper than at home? Show under what conditions such a result is possible. Take as an extreme example the following case: A farmer discovers a mine of copper on his farm from which he can obtain the metal in unlimited quantities at one third the current cost. Our import duty is 45 per cent *ad valorem*. How are the most advantageous selling prices for the farmer at home and abroad respectively determined?

12. Should it be regarded as a sign of want of skill, or as a sign of prosperity, that the imports of a country are very large in proportion to its population?

*13. Within two or three years of the close of the Franco-German War the French paid an indemnity of 5,000,000,000 francs to the Germans, having raised the money by loans. Is it to be supposed that there was any actual transport of this amount of coin from France to Germany? Whether there was or not, explain what the economic result of the payment finally was.

*14. If five thousand Americans go to Europe for the summer and spend abroad, on an average, $1000 each, what is the ultimate effect of this expenditure?

15. If our government could adopt such a policy that we could export as small or as great a value as we pleased in payment for a given volume of imports, ought it to make the exports large or small in amount?

CHAPTER XII.

THE CAUSES WHICH DETERMINE THE RATE OF INTEREST.

72. The question of usury has been one of the stumbling-blocks of mankind in all ages. Except in the most intelligent society, and in recent times, the taker of "usury" has been generally looked upon as one who unjustly made a profit without rendering any service in return. The view of the natural man may be illustrated as follows: I loan a man $1000. During the year it remains in his hands I, the owner of the money, have nothing to do with it and have no agency in its operations, yet at the end of the year I demand and receive back from him not only the $1000, but $50 or perhaps $100 or more in the way of compensation. Compensation for what? Apparently not for anything I have done or been doing. Not for my labor in gaining the $1000, because I was compensated for that when I got the money; not for anything I did afterwards, because I did nothing afterwards. Thus it looks as if I got my interest without rendering any service whatever. The case seems strengthened when traced to its every-day consequences. If, by my own earnings or by inheritance, I am fortunate enough to be the owner of $100,000 or more, I can spend my life without performing any labor whatever, and live in comfort, and perhaps in affluence, on what society pays me as interest without expending any of my original fortune.

Yet if we look at concrete cases we shall see that this difficulty must be surmountable. If the usurer were a person who forcibly compelled people to take his money and pay him interest for it, then the preceding general conclusion would be evidently correct. But, as a matter of fact, he never loans money unless some one comes to him for it, and is willing to pay the interest demanded. Now, evidently no one will do this

unless he expects, by means of the money, to receive not only the benefit of the money itself, but of the interest which he expects to pay. Of course it is here presumed that the borrower knows what he wants and what he is likely to do, and that he is not systematically the victim of a delusion which prompts him to seek that which is going to do him an injury. As a matter of fact, if we look into the case, we shall find that as a rule the borrower of money does gain by the bargain. Take for example the owner of a fertile pasture-field in California. The field is of no use to him unless he can stock it with sheep. Unless he can find somebody to supply him with sheep, he may have to sell half his field in order to get sheep for the other half. Instead of doing this he goes to a capitalist, borrows money, perhaps at twelve per cent interest, and buys the necessary sheep. At the end of the year he sells his wool and receives for it more than he has expended for pasturage and services, and still has his sheep. He pays the capitalist his interest, and is still richer than he was when he started. He could sell the sheep, and with the proceeds pay off the principal and have a profit left.

What has gained this profit? Only his own labor and exertions, says the objector. But this is clearly an error, for it is certain that if nothing but his own labor and exertions were necessary he would not have gone to the capitalist at all. His labor would have been worthless without the sheep, and he could not get the sheep without money. But granting this, the objector asks, What right had the capitalist to charge him interest? The answer is that in the course of the year the man has been enabled to make twice as much profit with the capitalist's money that he could have made without. Nothing, therefore, can be more equitable and just than that the capitalist should have his share of what his money helped to produce. Between rational people there can be no lending and borrowing unless it is expected that the money is going to enable the borrower to gain more than its interest, through the advantage it gives him. Without this it would be unwise for him to borrow.

Indeed without this it will be unwise for the capitalist to lend, because he may not get his money back again unless the borrower has been so successful in the use of it as to be able to repay it with interest. Thus the difficulty which we have cited is simply a wrong way of looking at things, and arises from neglecting or overlooking the principle that every agency necessary to production is to be counted as a factor in production. The mistake is of the same nature as when we look upon a brick house as simply a product of the labor of brickmakers, bricklayers, and carpenters, and leave out of account the knowledge and skill which were necessary to organize and direct their work.

73. Since there are people always ready to borrow money and others ready to supply it, it follows that we may speak of supply and demand in borrowing and lending money as we do in exchange. Moreover, we can easily see that the rate of interest is determined, at least for the time being, by the relation between demand and supply, just as the price of goods is so determined. Every increase in the rate of interest tends to discourage borrowers and thus to diminish demand, for the same reason that a rise in prices diminishes the demand for goods. It also increases the supply by offering stronger inducements to owners of money to save and lend it instead of spending it themselves. Thus in each state of the market there will be a certain rate of interest at which the supply and demand for money to lend and borrow will be equal. When the demand exceeds the supply the rate of interest will rise, thus checking the demand and stimulating the supply. When demand falls off, the rate of interest falls also, thus discouraging the supply and encouraging the demand.

Fluctuations of this sort are seen from week to week and month to month in the great money-centres of the world. The Bank of England fixes its rate of discount from time to time according to the state of the market, to which it therefore serves as an index. Ordinarily the rate is three or four per

cent per annum. But occasionally satisfactory borrowers cannot be found without going even below three per cent. Occasionally the rate rises to six, eight, or ten per cent. In America the prevalence of usury laws nominally prevents these fluctuations; but the result of this is that when the demand for money is so great that the rate of interest necessary to equalize demand and supply is above the legal rate, the banks select the customers to whom they will lend. The principles upon which this is done will be discussed later; all we have at present to understand is that in each state of the market there is a certain definite rate of interest which will equalize demand and supply.

74. All this does not, however, tell us why in the long-run money should have a definite rate of interest. Why is it, for example, that in a certain state of the market the borrowers and lenders should be in such proportion that four per cent per annum would equalize the two rather than one per cent or fifty per cent?

To answer this question we have to examine the causes upon which the demand and the supply respectively depend, and see by what conditions they are equalized. In order that any person may be willing to borrow money at a definite rate of interest, he must consider that he has at least an average chance of gaining more than that rate by means of the money. At this point a source of confusion is to be noted and avoided. What the borrower really pays interest for is *capital*, not money. The borrower can gain nothing by keeping the money; all he borrows it for is to purchase some kind of capital. True, it is morally and physically possible that he might expend the money in his own support. But a man who would do this would never be able to borrow at all. As a matter of fact, it is always necessary that the lender should have full assurance that the borrower will be able to pay, and he therefore requires that the borrower shall place a full equivalent of capital, with a margin to guard against loss, in possession of the lender or of some

trustee. Such a legal conveyance of the ownership of capital to guard a lender against loss is a mortgage.

We see then that what is called the *rate of interest* on money is not a property of the money itself, but depends upon the advantage which capital gives its owner in production. We have then to see in what this advantage consists. In the first place, it has been pointed out that capital is a labor-saving agent (II. 29). Its fundamental property is that, with the aid of labor, it returns its user at some future time a value greater than that of the capital and labor combined. For example, if by expending $100 in any kind of capital to-day, the manufacturer finds that he can add $10 per year to the net value of his product, after paying for the additional labor, and deducting all the cost of keeping up his capital to its original value of $100, then that capital yields him a profit of ten per cent per annum. If the increase of production does not exceed the cost of keeping up the capital, then he would make no greater profit with the capital than without it, and so there would be no use in his acquiring capital at all.

It has already been shown that nature may be said to keep a number of standing offers of interest upon capital open to the world (II. 29). These offers take the form of opportunities for digging canals, building railways and tunnelling mountains, and, in general, of developing the resources of the country. The rate of profit offered depends upon how far the country is already developed. In an absolutely new country, such as America was three centuries ago, we can hardly set any limit to the rate of interest offered by nature. This is the same thing as saying that capital was very much needed, or that there was great room for improvement in the facilities for production. At the present time it is not always possible to know with certainty in advance what rate of interest nature does offer for building a particular railway or factory. But men engaged in the management of capital make the best estimate they can of the profit to be gained in each case, and select their field of investment accordingly.

Next consider the case of circulating capital. A manufacturer

finds that with the machinery he already possesses and the laborers he already employs he can make more goods than he does. But to do this he must increase his stock of raw materials. If he has not the means of doing this, he must borrow money in order to purchase the necessary materials. In order that he may gain a profit exceeding the interest which he pays, he must be able to sell his increased product at an advance over the increased cost of material and labor. Were the state of things such that neither he nor any other manufacturer could do this, there would be no profit in increasing the quantity of goods manufactured, and the work would remain stationary. Hence, although circulating capital is not a labor-saving agent, it is yet a requisite of production whose accumulation requires abstinence from its immediate enjoyment on the part of the owner.

75. Next let us see in what way this demand acts upon the supply. The first question is, Why is the supply of money to lend limited at all? The reason is that the amount of every man's income which he is able and willing to save from current expenditures is limited, and this is all he can have to lend. A large fraction, probably a large majority, of the population do not expect permanently to save anything for use as capital. It is to the few whose incomes are so large or whose personal wants are so few that they are willing to save that borrowers must look for capital. Now, unless some interest is to be gained as the result of saving, there is no strong motive for anybody to save more than is necessary for the support of himself and his family, and for insurance against want in his old age.

To see this by an example, suppose that you have gained one hundred dollars. You have your choice to expend it in something for present enjoyment, or to postpone the expenditure to some future time, say the end of the year. Perhaps you intend to buy a cyclopædia, and the question is whether you shall buy it now or at the end of the year. Other conditions being equal, the advantage is in favor of buying it now, because then you

will have the enjoyment of it during the year, while if you postpone the purchase, you not only lose this enjoyment, but you may die in the mean time and thus lose all opportunity of any enjoyment of your money. If then a manufacturer comes to you and wants to borrow the money, it is evident that you and he cannot both have the benefit of what the money may purchase during the year coming. You will therefore refuse him unless he pays you what you consider a sufficient compensation for going one year without the use of the cyclopædia.

Viewing the same case from a different standpoint, let us suppose that you do not under any circumstances want the cyclopædia until the end of the year,—perhaps indeed it is not to be published until after that interval,—and that you have not yet earned the money to buy it. The question then takes the form, Shall you earn the money necessary to purchase it now, or shall you wait until you want it? Unless you are so fortunate that you can earn a hundred dollars without any disagreeable labor, your wisest course is to wait. It will at worst cost you no more to earn the money a year hence than it will now, and, since the future is always uncertain, it is best not to expend labor for what after all may fail to yield fruition. And so for this reason also you have no sound motive for earning the money in advance, unless you are to make a future profit by doing so. Thus, as a general rule, there will be no money to loan unless interest is to be gained.

76. The minimum below which the rate of interest can never fall is that which just suffices to induce the savers of income to earn an income in advance of their enjoyment of it. What rate this is is a fact of human nature which can be learned, not by reasoning, but only by observation. Human nature differs so widely with different men that not even the law of averages can be satisfactorily applied, except in a single place and at a given time. Some men are in receipt of great incomes without any more exertion than is really necessary to their enjoyment of life. To such men it is all the same whether

they earn money now or next year, and they might be willing to part with it without receiving any interest at all. In the case of other men a certain instinct of what is right leads them to live frugally and thus to expend less than their income. Such men will be willing to loan at a very low rate of interest. These cases are, however, exceptional, and the rule is that men save only in consequence of the interest they are to gain.

The numerical value of the minimum rate of interest is a result of certain qualities of human nature which we cannot measure with certainty. It is, however, a curious fact that up to the present stage of human history the rate of interest has rarely fallen below that which would yield a young man, in the course of his average life, a profit equal to the principal invested. The expectation of life for a man at twenty may be put at forty years. If he has gained a certain capital it will, without any investment, last him his average life, if he consumes two and a half per cent of it per annum. Hence, so far as he is individually concerned, he has no motive for saving unless he can gain this rate of interest. Now this is about the minimum rate yet known. Of course no perfectly exact numerical statement can be made in such a case, because the rate is always fluctuating; but this is a sufficient approximation for our purpose. Since, then, as human nature is constituted, the supply of capital tends to diminish as the rate of interest falls, it follows that all persons who want capital must pay interest. Nature is competing with them, and they must at least pay her price. But the rate they have to pay may be very small. As a country increases in wealth, the rate of interest tends to fall, both from diminished demand and increased supply. Nature continually offers less and less, as the resources of a country are developed, and the accumulation of raw material and the development of factories constantly approach the limit at which no further profit can be made by the further increase of capital. Again, as wealth increases men are more and more able to save, and thus the supply increases.

77. *Risk as affecting the Rate of Interest.* In the preceding discussion we have taken no account of the risk which a lender incurs of wholly or partially losing the money he has loaned, in consequence of inability on the part of the borrower to repay him. For this risk he must be compensated; and of course the amount of the compensation will be greater the greater the risk. Since he is himself the sole judge of the risk and the compensation, no sure mathematical law can be laid down to govern the case. The mathematical theory of probabilities, however, embodies a principle which is applicable to a certain class of cases, if the lender reaches his conclusions in the most reasonable manner. This principle is that the compensation for a risk is equal to the amount in jeopardy multiplied by the probability of loss. Suppose, for example, that from the best judgment which a lender can form there is one chance out of twenty that the borrower with whom he is dealing will fail within a year. We then say that the probability of failure within the year is one twentieth, and the proper compensation for the risk would be five per cent per annum. If the minimum rate of interest were also five per cent, then the lender should receive ten per cent per annum for his money.

We ought perhaps to say that this is the minimum which he as a prudent man ought to accept. If his situation is such that the loss of the money would reduce him to distress, he ought to demand a higher compensation on account of the risk. The wealthier he is the nearer this reasonable compensation will approach the mathematical limit. It can never fall below that limit.

78. *The Nature of Capital and Cause of Interest.* The reader who has carefully mastered the subject of capital and interest will see that they depend fundamentally upon the fact that *time*, and perhaps a long time, must elapse between the performance of labor and the enjoyment of its products if we would get the maximum of ultimate enjoyment from our labor. For example:

If I sow a crop, I must wait a year for its final enjoyment.

If I raise a horse, he will not be of any use for three or four years, and I may not get all the use of him for ten or fifteen years.

If I build a railway, I may not be fully compensated for my labor until after the lapse of twenty or thirty years.

Now, as I am situated in civilized society, I have my choice either to enjoy all my labor shortly after the time of performing it, or to postpone my enjoyment for one or many years.

The longer I am willing to postpone my enjoyment the more thorough and effective I can make the agencies by which my future wealth is to be produced, and hence the greater the amount of ultimate enjoyment which I or my posterity can command from my labor.

But my wants are immediate. I cannot live now on next year's crop, nor haul my crop to market with a new-born colt. I must be fed, clad, and housed while working for my future self.

He who loans me money is one who enables me to devote my labor to my future good by feeding, clothing, and housing me *now*, and hence enables me to produce more wealth in the long-run. If he does not require repayment of the money until I have begun to gain the increased means of enjoyment, it is just that I share the increase with him when I do pay it. *Interest* is the excess which I pay him on account of his permitting me to anticipate the future results of my labor by enjoying now what otherwise I would only have enjoyed in the future, or perhaps would never have enjoyed.

When I devote myself to labor intended to yield sustenance only in the distant future, I do not engage in the direct product of the sustenance, but in the production of some intermediate form of wealth intended to increase the productiveness of my future labor. This intermediate form of wealth we call *capital*.

EXERCISES.

1. Bastiat illustrates interest by supposing one carpenter, James, with ten days' labor, to make a plane which he loans to William. The latter uses it for 290 of the 300 working days of the year, when it is worn out. He spends the remaining 10 days of the year in making a new plane to return to James, but, in addition, he gives him a plank as interest. Mr. Henry George says William lost the value of this plank by his bargain, because he could have spent the first 10 days of the year in making himself a plane, instead of the last 10 days, and would then have saved his plank. Show the fallacy.

2. Explain why the rate of interest is highest in newly-settled countries. Especially what causes affected the rate of interest in California immediately after the gold discoveries?

3. Show the effects of discovering improved methods of production upon the rate of interest, and explain how the effect depends upon the costliness of the machinery needed to put the improvements into operation.

4. What effect has a low current rate of interest upon the price of government bonds bearing interest at a fixed rate?

5. Explain how it is that usury laws do not generally make the rate of interest lower, but rather tend to prevent men from lending their money. Take the following example of their spirit: A man in pecuniary difficulties goes to a capitalist saying, "Could I only borrow a thousand dollars for a year, I could come out with a handsome profit. But if I cannot get this loan, I shall be ruined and my family will be destitute. If the capitalist saves the man by loaning him the money at 12 per cent interest and compensation for risk, the usury laws punish him by perhaps forfeiting the entire sum loaned. If he replies to the man, "No, I will not help you on any terms whatever, and if your family starves it is none of my concern," the law does not censure him.

6. Explain the relation of interest to the increased productivity of labor due to the use of capital.

7. How does carelessness on the part of a community respecting its future needs affect the rate of interest?

BOOK IV.

THE SOCIETARY CIRCULATION.

BOOK IV.—THE SOCIETARY CIRCULATION.

CHAPTER I.

THE MONETARY FLOW.

1. We have now to present the reader with a method of representing the exchanges within a social organism considered in their totality. The object of the method is to facilitate the study of the action of economic causes upon production and exchange.

There is no act of exchange the effects of which terminate with the act itself. When the ownership of any commodity passes from A to B, that passage may only pave the way for another transfer from B to C, and so on until the commodity reaches the person who is finally to consume it. A piece of money changes hands without end, since every person who receives it expects, unless in exceptional cases, to pay it out again to some one else.

We call to mind that under our present system every exchange is a double transfer of ownership—money passing in one direction, and the ownership or enjoyment of wealth in the other direction. We thus have two separate processes of transfer, one of money and the other of wealth or its enjoyment. We shall consider these two systems separately, and afterwards show the relation between them. The transfer of money is the most simple in its conception, and we shall therefore begin with it.

2. *The Dual Conception of Economic Quantities.* We now have to draw a distinction between two measures or conceptions of economic quantities the neglect of which has been a potent cause of dispute between schools, and inexactness of thought. This distinction is that between a *fund*, or accumulated quantity, and a *flow*. Applied to a material substance like water, this would be expressed as the distinction between a *reservoir* of water and a *flow* of water. We have a conception of a certain number of gallons of water stored up in a mill-pond. We also have a conception of a rate of flow into the pond, or out of it, of so many gallons per hour. Now, there is no fixed relation between these two conceptions. A very large mill-pond may have a very small flow of water from it, and a small pond may have a much larger flow. If we were told that one pond had a much larger supply of water than another, this statement would be ambiguous, and we could make no use of it until we knew whether "larger supply" meant a larger sum total of water or a larger flow per hour. To avoid ambiguity we define fund and flow as follows:

A **fund** is quantity or value pure and simple: so many dollars, for example.

A **flow** is so many dollars per hour, day, or year.

3. To form a conception of the total exchanges of a country or other social organism, we must first conceive of all the individuals who can make exchanges. This class includes all legal persons who can be owners of property. A firm or company of any kind must be considered as a person distinct from the men who form it. For example, if Brown and Smith are in partnership, there will be three persons among them, the firm and its two partners. But unless the combination forms a separate legal person, having dealings with all its members individually, it is not to be considered as a person. On the other hand, we are not to count as separate persons those who do not do business on their own account. As a

general rule, husband, wife and minor children will all together constitute but a single person. In fact, any body of people whose separate interests do not concern society may be considered as a single economic person whenever we want to consider their relations to the rest of society.

In the following chapters we shall graphically represent economic persons by small circles.

4. *Flow of the Currency.* In this chapter we use the word "money" in its widest sense, so as to include everything of which the ownership is transferred from hand to hand in payment for goods or services. Let us consider all the money paid by any one person. To do this we record every payment that he makes, and write down its amount in a column of an account-book. At the end of some unit of time, say a year, we add up all these payments. We shall then have a definite sum, expressing all the payments of that particular person during the year. Let us imagine this sum calculated in the same way for every one of the thousands or millions of persons who make up the social organism. The sum total will express the amount of the entire payments within the organism during the year. This sum we call the **flow of the currency.**

Instead of considering payments, we might have taken the receipts of money. Under every person's name we should then write down all the sums of money paid to him. The sum at the end of the year would express the total annual payments to him, and this sum for the whole community would give another value for the flow of the currency. If we determined the flow by both methods, then, since every payment made by any one person must be made to some other person, we should register every payment twice, once under the payer and once under the payee. Hence we should get the same sum total of the flow in either case.

This, however, presupposes that we include no payments made to or from foreign persons, or persons outside the or-

ganism under consideration. Such payments form a very important economic factor; but in this preliminary discussion we have to omit them, and consider only internal payments. We may, if we choose, consider all the persons in the world as forming a single social organism, and the two measures of the flow will then always balance.

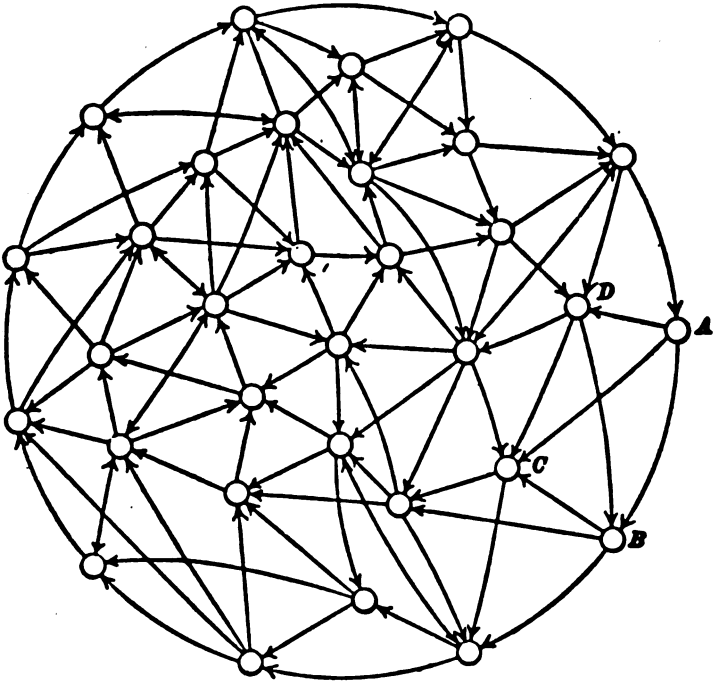


FIG. 1.

The conception of the flow of the currency is represented graphically in the following way: We draw a little circle for each person legally capable of being an owner of wealth. Whenever a payment of money is made we suppose it to pass *from* the circle representing the payer *to* that representing the payee through a little vein. This vein we represent by a line from one circle to the other, with an arrow-head showing the

direction of the payment. These veins form a network through which we suppose the money to be flowing from person to person. This continual flow of money from owner to owner is called the **monetary circulation.**

It will readily be seen that when we speak of a *flow* we introduce a conception which does not strictly conform to the actual case, because at no time is money really flowing like a fluid from person to person. Excepting such cases as that of transmission by mail, money is always in possession of some one person, and it passes from one person to another in a moment by the act of payment. It would therefore be more exact to consider the circles as representing reservoirs of money, and the motion along the arrows to take place by sudden transfers from one reservoir to another. But the transfers have the same result as a flow, and a certain advantage is gained by conceiving of the money as regularly flowing from one reservoir to the other, as shown by the arrows. In fact, the familiar words "currency" and "circulation" in English, and the yet more expressive phrase "*argent liquide*" applied by the French to ready cash, or money all ready to flow, show how natural the conception of a flow of money is.

We may imagine that on each connecting vein we write down the amount of all the money which has passed along that vein in the course of the year. The sum total of all the amounts passing from any one person will be his total payments, and the sum of all the amounts passing to him will be his total receipts. The sum of all the numbers written down upon the veins will be the total flow of the currency. The amount of this flow in dollars we represent by the symbol F.

The general rule will be that as much money flows from every person as flows to him. It is true that there is no law against a man collecting as much money as he chooses, just as he would collect books or pictures. Practically, however, he has no motive to collect any considerable sum of money, because he loses interest on it as long as he keeps it. Hence, as a matter of fact, nearly all the money received by persons

is very soon paid out again for some purpose. To this rule, however, there are two important exceptions, that of banks and that of the government. We have shown that banks can create money in the form of credit. The stream of money may therefore flow from them for a considerable period without any stream flowing back. When the credits are paid off by their debtors, they are in receipt of money which they are under no legal obligation to pay out again. Still we shall generally find that in the long-run the receipts and payments will nearly balance in the case of banks as in other cases. In the case of a government, payments can be made only in accordance with certain legal forms, and there can be no assurance that they shall exactly balance the revenue. Hence large sums of money may be collected in the public treasury at one time, to be paid out at another time. But if, instead of taking a single year, we take a generation, the account of receipts and payments will still be nearly balanced.

We are therefore to conceive that the inflow to every person is equal to the outflow from him. But it does not follow that the number of streams to and from him must be equal. If his sole source of income is a salary, there will be but one flow of money to him, namely, that coming from his employer. But from him there will be currents to his grocer, his baker, his landlord, his tailor, and dozens of others from whom he buys. A retail tradesman may have streams flowing to him from hundreds or even thousands of customers, while the streams from him may be no more numerous than in the case of his salaried clerk.

5. *Distinction and Relation between the Volume and the Flow of the Currency.* We have to make in currency the distinction between a fund and a flow, the logical nature of which has been already pointed out. The *volume* of the currency is a fund. On our diagram the volume is the total number of dollars flowing through the network at any moment. If we introduce the more accurate conception of each person as a reser-

voir, then, since the reservoirs contain all the money at any one moment, we should say that the volume of the currency was the sum total contained in all the reservoirs at any epoch, say on midnight of a particular day.

The method of determining this volume has already been laid down (II. 96–98). For our present purpose we may consider it as made up of two parts, material money and immaterial money. The material portion consists of coin, bank-notes, and other forms of credit which pass from hand to hand without change or subdivision. The immaterial portion of the currency consists of bank credits, the ownership of which is transferred by cheques. The relations between the volume and the flow of these two kinds of currency have to be considered separately.

Let us on January 1st fix our attention on a dollar bill. We shall perhaps see this bill pass from a young man to a confectioner in exchange for ice-cream; from the confectioner it passes to the grocer, from the grocer to his drayman, and so on. We may imagine it passing from hand to hand until December 31st. If we count up the number of times the bill has changed hands, we shall have the contribution to the flow of the currency made by that particular bill. Adding up the contributions for all the dollar bills in circulation, we shall have the sum total of their contributions to the flow F. In the case of the five-dollar bills we proceed in the same way, but multiply the number of transfers by 5. The product will be their contribution to F. Doing the same thing for the ten-, twenty-, and fifty-dollars bills, and for all the gold and silver pieces in circulation, we shall have that portion of F due to the circulation of material money. Let us call this sum total F'. If we divide F' by the sum total of all the bills and pieces of coin in circulation, we shall have the average number of times which material money changes hands in the course of the year. Dividing the 365 days of the year by this number, we shall have the average number of days which money remains in one man's hands.

It follows that if nothing but a fixed number of pieces of

material money were in circulation in a community, we could obtain the annual flow of the currency in a third way, as follows:

Multiply the denomination of every piece of money by the number of times it changes hands in a year. We shall then have as many products as there are pieces of money. The sum of all these products will be the flow of the currency.

Let us see now how this conception is to be modified in the case of bank credits. As already shown, these credits are not material money, but consist simply in rights to money, which are represented by writing certain figures in the books of the bank. Yet they form a part of the volume of the currency. But we cannot separate them into individual dollars so clearly as we can the bank-notes. The results, however, do not offer any immediate difficulty. Every bank cheque drawn by A in favor of B is a contribution to the flow F; if B passes this cheque to C in payment of a debt, the cheque is again added to the flow. Moreover, it is only so far as the bank credit is thus transferred by means of cheques that it has anything to do with the flow. If then we call the sum total of payments by cheque F'', we shall have

$$\text{Total flow of the currency} = F = F' + F''.$$

If we call the average volume of bank credits or deposits D, then dividing F'' by D, we shall have the average number of times which a dollar of bank credit changes hands in the course of the year, and hence we can determine the average length of time which it remains in any one person's hands.

We have now two quantitative conceptions before us: a sum total of payments, F, and the total volume of currency, which we shall call V, by which these payments are made. It may perhaps give precision to these conceptions if we compare them with that of the circulation of blood in the body. The body of an adult man contains a certain number of pints of blood. If we keep an account of all the blood which flows into any one organ or part of the body, the forefinger for example, in the course of one day, we shall have the circulation of that finger. Since the same blood may flow in over and over again, and must

be counted every time, the circulation, even for the forefinger, may be expressed by a greater sum total than the entire volume of blood in the body. Moreover, this circulation C will be greater the greater the time we take, being sixty times as great for one hour as for one minute, and twenty-four times as great for a day as for an hour. If we add up C for every organ in the body, we shall have the total flow of blood for one day. Dividing this total flow by the entire volume of the blood, we shall have the average number of times which the blood circulates in the course of the day.

This analogy must not, however, be carried too far. Blood circulates by being always carried back to one central point, whereas money is not so carried, but may only pass from hand to hand without end. If we wish the analogy to correspond more exactly, we must suppose that to the circulation of a single molecule of blood from the heart to any organ and back again corresponds the passage of a unit of money from one person to another.

Let us now state the algebraic relation between the volume of currency V and the flow F. This relation is expressed by saying that F is equal to V multiplied by the average number of times which each unit of money changes hands in the course of a year. We may use the algebraic notation:

R′, the average number of times a material dollar changes hands in a year;

R″, the average number of times for a bank credit;

R, the same average for the whole volume of currency. If this number R, which we call *rapidity of circulation*, is fixed —that is, if money always circulates with the same average rapidity—then the relation between F and V is fixed and definite, and one cannot be increased without increasing the other also. We therefore have between the volume, flow, and rapidity of circulation the equation

$$F = V \times R,$$

which is the fundamental equation required.

6. We now have to consider whether there is any law which fixes the number of times R that each dollar can change hands in a year, or, what amounts to the same thing, whether there is any law which determines how long a dollar shall remain on the average in any one man's hands. A little consideration will show us that although this last period is not fixed by any precise law, being subject to changes through the action of various causes, yet it can only change between very narrow limits.

If every man could pay out his money the instant he got it, the time between two payments would be very short. But as a matter of fact he must in general keep more or less of his money a certain period before he can advantageously spend it. If he receives a salary payable at the end of every month, he probably pays a moderate grocery bill at once, and keeps the rest of his money to spend from time to time uniformly throughout the month. If he owes one half, but pays out the other half at a uniform rate, then the average time which his money stays in his hands is a quarter of the month. In a community of such men, such pieces of money would change hands forty-eight times in the course of a year. The change of hands is made with greater rapidity the higher we go in the financial scale. As a general rule every man feels that he is losing possible interest on his money by keeping it, and therefore tries to pay it out for something as soon as he advantageously can. The larger and wider the transactions in which he is engaged the better he can manage this, and therefore the quicker he can pass his money. It would probably be found that among the brokers on Wall Street every dollar changes hands at least once, and possibly a number of times, in the course of a day.

It might seem at first sight that the causes which determine how long a single dollar will remain in one man's hands must be so exceedingly transitory and variable that no average time can be fixed. This conclusion would be correct if we were required to consider the time sought as an absolutely fixed math-

ematical quantity. But although the quantity cannot be thus absolutely fixed, the conditions of society are such that the law of averages prevails with a near approach to rigor. The average length of time which a dollar remains in one man's hands is fairly definite when we take the average of millions of people, each using hundreds of dollars. At the same time it is liable to change by the action of any cause, however slight, which affects the transactions of the whole community in the same way. There are, as we shall presently show, certain causes which accelerate the passage of money from hand to hand, and there are certain conditions under which this passage is retarded and money is kept longer in people's hands.

ILLUSTRATION AND QUESTION.

1. An example of confusion between the ideas of a fund and a flow is found in the discussion of one of the most celebrated economical theories of modern times, that of the "wage-fund." This theory asserted that the sum total of money in a country available for the payment of wages was limited and definite in amount, a statement in itself quite correct. Hence it was concluded that wages could be increased only by increasing this amount. It was thus supposed that there was a certain relation by virtue of which the amount of wages depended upon the amount of the wage-fund. But a very little consideration will show us that no such relation could exist, any more than the flow of water over a dam could be determined by the amount of water in the mill-pond. No matter how vast the fund, it would in time be all absorbed in the payment of wages; then, were the fund never replenished, no more wages could be paid, and society would come to an end. The fund must therefore be continually replenished. Now, this being so, the payment of the wages depends, not upon the magnitude of the fund, but upon the rate at which it is replenished. This rate is not a fund at all, but a flow. It bears the same relation to a fund that a flow of so many gallons per hour does to a reservoir holding so many gallons of water.

2. Adding up all the bank cheques drawn in a community during a month, it is found that they amount to twenty millions of dollars. If each cheque were paid by the drawee to a third person, who collected it, what would be the total contribution made by these cheques to the monetary flow? If the bank deposits averaged five millions of dollars, what would be the annual rapidity of circulation for the bank credits? Note that we do not count the deposit of money in a bank as part of the monetary flow.

CHAPTER II.

THE EQUATION OF SOCIETARY CIRCULATION.

7. In the preceding chapter we considered the total payments of money from person to person in a social organism. Now, considering only the cases which come under economic principles, each of these payments was made in exchange for something transferred from the payee to the payer. This something may be either material wealth already in the possession of the payee, or it may be a service involving labor on the part of the payee. When one hires a laborer to work for him, he receives in return a service consisting of the results of the man's labor. If he buys a pound of tea at his grocer's, he receives the tea in exchange for his money. Hence, as already remarked, to every flow of currency from one person to another corresponds a reverse flow of wealth or services from the second person to the first. The total circulation consists, therefore, of two combined circulations equal and opposite to each other, the one of some form of current money, the other of some object of desire, the product of human labor. To distinguish these two we shall call the latter the *industrial circulation*.

The same diagram which represents the monetary circulation may also be considered to represent the industrial circulation, the latter flowing in the opposite direction from that of the arrows, but along the same veins.

We shall use the term *societary circulation* to designate these two opposite circulations.

We have shown that it is the industrial circulation alone which really supplies the wants of the community. Were it possible to keep up the industrial circulation without the use of money, men's wants would be supplied just as they are (II. 53).

Since we cannot possibly keep up the industrial circulation without the other, it might seem idle to point out this fact, but the understanding of the fact is conducive to sound thinking on the subject. The public are prone to assume that the supply of their wants depends altogether on keeping up the monetary circulation, regardless of the industrial circulation, and bad policies are therefore urged upon governments. The lesson to be drawn from the fact is this: *The influence of changes in the monetary circulation upon the well-being of the community is to be determined by their effects upon the industrial circulation.*

8. Our first proposition concerning the industrial circulation defines its amount. If we include in this circulation every transfer of commodities or services for which money is paid, or to be paid, and no others, then its value will necessarily be equal to the flow of the currency, this flow having been defined as the sum total of money payments. But to preserve the equality we must exclude from the monetary flow all such transfers as loaning money, or depositing it in a bank, because these are not balanced by reverse transfers of wealth or services. Then, keeping the two flows in correspondence with each other, the flow of the currency must, in the long run, remain equal to the total value of the industrial circulation as measured in money.

Of course this measure is subject to the general laws of measurement already developed, according to which the numerical value of any fixed quantity varies inversely as the measuring unit. Hence, with every change in the absolute value, or "purchasing power," of the dollar, there will, all other conditions being equal, be an inverse change in the money measure of a fixed industrial circulation. This measure will therefore vary directly as the scale of prices. Hence, in accordance with the mathematical principle already illustrated, the money value of a fixed industrial circulation will be equal to some quantity multiplied into the scale of prices. The quantity

to be multiplied is simply the value of the industrial circulation as it would be on the scale of prices which we assume as the unit of comparison. Thus in III. 11 we assumed the scale of prices in the year 1880 as the unit, and found certain other scales for other years. If then we put K for the industrial circulation on the scale of prices which we take as unity, and if we put P for the actual scale as found from the table of prices, then the money value of the total industrial circulation will be $K \times P$.

From what has already been said, this product is the same as the flow of the currency; hence, using the notation already given, in which that flow is $V \times R$, we have the equation

$$V \times R = K \times P,$$

which may be called the *equation of societary circulation*.

This equation may be regarded as the fundamental one in the theory of exchanges. To the non-mathematical reader a further explanation of its significance may be needful. The first member, $V \times R$, assumes the very obvious fact that the total money value of the exchanges which will be effected in a year by a number V of dollars is equal to V multiplied by the average number of times which a dollar changes hands during the year. The other member of the equation, $K \times P$, implies that the total money value of the wealth and services which these payments balance increases with the scale of prices, and with the quantities of wealth exchanged; so that when either of these factors increases, $V \times R$ must increase in the same proportion.

9. The next proposition is that the quantity K, which represents the industrial circulation as measured by the unit scale of prices, also represents, with some slight modifications, the sum total of the necessary operations of the social organism, so far as these operations consist in the transfer of goods and the rendering of services. To show how this is, and what it means, let us take some continuous series of those operations. Our old history of the coat will serve for this purpose. We wish to

learn what flow of the currency was caused by the various processes of transportation and manufacture to which it was subject. Commencing with the sheep on the prairie, the first industrial operation was that of tending and shearing the sheep. The measure of this industrial operation was the money paid by the owner of the sheep to his employés for their work, which money payment counts as a part of the flow of the currency. The next industrial operation we may conceive to have been the transportation of the wool to Chicago by rail. This was balanced by a flow of the currency from the sheep-owner to the railway company. Arriving in Chicago, the ownership of the wool passed to the wool-merchant, and was balanced by a flow of the currency from the wool-merchant to the owner. By a succession of such operations the wool reached a factory, and each operation was balanced by a flow of currency. In the factory operatives rendered service in manufacturing the wool into cloth, which service was balanced by a flow from the owners of the factory to the operatives. As the ownership of the cloth passed successively to the wholesale dealer, to the tailor, and the owner of the coat, every transfer was balanced by a flow of currency between the same parties in the opposite direction. The same thing is evidently true of all industrial operations. For every such operation there is a corresponding flow of the currency.

We are mainly concerned with the converse proposition that, omitting exceptional cases to be considered presently, every money payment is made to facilitate the progress of goods or services from those who own or render them to those who want them. This follows from the general principle that no one pays out his money unless he receives an equivalent, and that he always pays it in such a manner as to get the greatest equivalent he can command. Hence, as a general rule, payments of money are made only for the services which they can most advantageously command, and every money payment is balanced by a corresponding transfer of services of some kind.

10. A third principle touching the industrial circulation is that there is a certain amount of that circulation which is most conducive to human well-being. To show what this maximum is, let us commence with a simple example. Here is a shoemaker who has a wife and two children to support. He can work a certain number of hours in the day, six or eight perhaps, with positive pleasure to himself. Work beyond these hours gradually becomes more and more irksome. The first additional hour he will think little of, the second he will have more aversion to, the third yet more, and so on. A point will at length be reached when he cannot work longer unless at the expense of his health.

Now, under the laws of demand and supply, he can obtain a certain amount of sustenance with his eight hours of agreeable labor. If this sustenance is all his family want, the problem of his existence will be a very simple one. But we may be sure it is not all they want. If it suffices to give them cotton curtains to their windows, they will want lace; they will want the choice cuts of beef rather than the coarser ones; and the wife will want to hire a seamstress instead of mending the clothes herself. The man will therefore certainly work a little more than the number of hours agreeable to him. The limit of advantageous working is reached when the additional sustenance which he can obtain by additional work will not compensate for the irksomeness of the labor. At this point he will stop working of his own accord. For the number of hours up to this limit he can command a certain amount of money yearly. This amount will be, so far as he is concerned, the most advanta geous flow of the currency from his customers to him. If he works longer, the irksomeness of the labor will more than balance the benefit derived through the additional monetary flow.

What is true of this shoemaker is true of everybody. There is a certain maximum amount of labor which, whether applied to production or exchange, cannot be exceeded without disadvantage to the individual. Every man must be his own judge of this maximum, because it depends upon his

health, habits, the wants of his family, and his own desire for wealth. We may therefore regard the flow of the currency as measuring, in the normal state of society, that particular amount of industrial circulation which on the whole is most conducive to the enjoyment and well-being of the community.

It is true that this proposition runs counter to current notions. The popular opinion is that almost every man in the community wants more employment than he can get. Merchants are sorry when business is dull, and glad when it is so brisk that they have hard work to keep up with it. Laborers are often out of employment entirely, although they profess their willingness to work for even lower wages than the products of their work ought to entitle them to command. But a fallacy underlies these conclusions. The fact is that the average man does not want to do any more work than he does. Many laborers desire laws to prevent them working more than eight hours a day. What everybody wants is, not to render more service, but to get more pay for that which he does render, which is a very different thing. That is to say, he does not wish to increase his part of the industrial circulation, but he does want to increase the flow of currency to him which should balance his contribution to the industrial circulation. In other words, he wants to establish a higher scale of prices for his services. The greater the demand the higher the price he can charge. Hence his desire for increased demand.

The wish for high prices being entertained by all men, there is a force akin to pressure tending to make the scale of prices as high as possible. Now, the very fact of this pressure reacts upon the circulation itself. Bearing in mind the proposition already reached, that every transfer must be balanced by a corresponding payment, it follows that there cannot be any greater industrial circulation than that measured by the flow of the currency. But the higher the scale of prices the less industrial circulation a given flow will measure. In other words, in our equation, if we suppose $V \times R$ to be fixed, then $K \times P$ must be fixed; so that the larger we make P the

smaller must be K. Hence the combined efforts of every man to command as high a price as he can for his services may result in himself or some one else not being able to contribute his normal amount to the industrial operations of the social organism.

11. *Exceptions to the Equation of Societary Circulation.* With every such general proposition of economics as this, we are to consider to what limitations and modifications it is subject. The first and most obvious limitation is that the act of incurring debts prevents it from being necessarily fulfilled at all times. When a debt is incurred, a transfer forming a part of the industrial circulation is made without any corresponding transfer of money in the other direction. If the debt is not paid during the year, we shall find in the sum total of the industrial circulation certain transfers which are not balanced by the societary circulation. But since, as a rule, the debt is paid at some time, it follows that in the long-run the balance will be made good. Moreover, taking each year by itself, the chances are that the excess of industrial circulation arising in this way towards the end of the year will be balanced by the payment of debts incurred during the year before.

It may be truly said that in cases of bankruptcy the payment is never made. If, then, we are to be quite strict, we should add to that side of the equation which represents the societary circulation a certain quantity indicating the loss from bankruptcy. The reader can do this, if he chooses, by writing the equation in the form

$$K \times P = V \times R + B;$$

B representing the loss by bankruptcy.

This modification would not materially affect the conclusions drawn from the equation, and therefore need not be further considered.

It may also happen that two persons, A and B, have made a direct exchange of goods and services, and that the only money that passes between them is a balance due from one

to the other. Then there would be a portion of the industrial circulation not balanced by a flow of currency. As a general rule, however, money passes between any two parties only in one direction at any one time. That is, if A buys from B, and B from A, it will commonly happen that A pays B and B pays A separately. Practically the cases are too few to be of any importance, the flows of money between any two persons being generally in one way only, and of commodities the other way. To include this exceptional case we have only to draw two veins between the circles representing the persons.

The opposite result occurs in great speculative transactions. In the Chicago markets the ownership of large quantities of wheat may at various times pass back and forth between parties, either with or without corresponding direct payments. So also, in New York, speculative sales of railway and other shares are made on a large scale. For reasons which will be presently shown, such sales, and the payment made for them, should be excluded from our sums total.

Yet another disturbance of the equation arises when A purchases from B, and B from C, and A pays C directly, and thus cancels both debts with one payment. To represent all the transactions, such a payment should be counted as made from A to B and again from B to C, and the veins should be drawn accordingly.

Yet another partial exception to the equation occurs in the collection of government revenues. When government collects a tax from the people, there might appear to be no industrial flow back to the taxpayers to balance the monetary flow embodied in the tax. We may, however, consider the general benefit rendered by the government as such an industrial flow, and then the balance will hold good. But if government borrows money, there is no flow of services from the government to the borrower. When, year after year, the government slowly pays off the debt, there is no industrial flow from the bond-holder to the government. These cases constitute another general exception to the equation. The same ex-

ception arises whenever a flow of currency consists in borrowing money to be subsequently repaid.

For the most part these exceptional cases do not need to be treated in connection with the main principles of the subject. Our proper course is first to consider the action of cause and effect as it would be were the balance of the two flows always perfect, and afterwards to consider, so far as may be necessary, what disturbance or change is produced in the exceptional cases.

12. *Illustrations of the Societary Circulation.* In the graphic representation of the monetary flow already given, each separate person was separately represented. But in considering the action of economic causes upon classes of men, we cannot consider each individual separately, but have to treat whole classes together. For example, we may consider all the shoemakers in a city, in the country, or in the world, represent them by a circle, and then suppose a flow of money to them and another from them. The flow to them will consist of all the payments made for the purchase of shoes; the flow from them will consist of their payments for leather and other capital, and for their own sustenance. We may also consider our class to include the whole body of men engaged in producing anything to be made into shoes—shoe-dealers, leather-makers, and even the raisers of the cattle whose hides went into the leather. If, however, we wish to consider the separate relations of these classes, we may subdivide them to any extent, and have different classes for the shoemakers, the shoe-dealers, the tanners, and so forth.

On this system let us represent graphically the operation of levying a tax in order to pay off a debt due the public creditors. We draw one circle to represent the public treasury; another circle, which we call *society*, represents the totality of the taxpayers, bond-holders excepted; a third circle represents the bond-holders or public creditors. We draw a vein from society to the public treasury, showing the flow of money from the people to the government, in payment of the tax.

We draw a second vein from the public treasury to the bond-holder, showing the payment to them to extinguish the debt. But the operation is not complete until the money gets back into the possession of society at large. If the bond-holders spent the money for miscellaneous purposes, it would go directly to society at large, and we should draw a third vein, when the circuit would be complete. This is shown in Fig. 2.

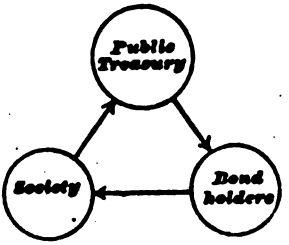


FIG. 2.

But suppose the bond-holders spend the money in building a railway. Since railways are built only by certain special classes of people, we may consider their functions as separate from those of society in general. The circulation will then be as in Fig. 3. Here the stream subdivides. One branch goes directly or indirectly to the laborers who excavate the road.

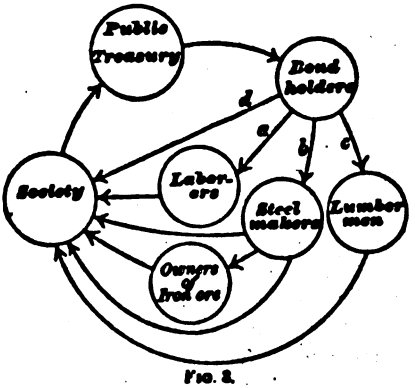


FIG. 3.

Another portion goes to steel-makers who furnish the rails. A third goes to lumbermen who supply the ties. The fourth we may consider as going to unenumerated classes of people, a part of society at large. Thus we have four flows, a, b, c, d, going from the bond-holders which are together equal to the one flow from the public treasury. As represented in the dia-

gram, two flows go from the steel-makers, one to society at large, and one to the owners of iron ore.

All the other flows we draw to society. Thus, taking the classification we have given, the single flow of money which went into the public treasury returns in five different streams. Of course, by subdividing the streams still further, we might have had a thousand or ten thousand return flows; but in any case their sum total would have been equal to the outflow of taxes, or, to speak more exactly, equal to the flow from society into the treasury of that portion of the tax used in paying off the bond-holders.

As another illustration, let us draw a diagram representing the flow of the rents paid to a landlord by his tenants, in

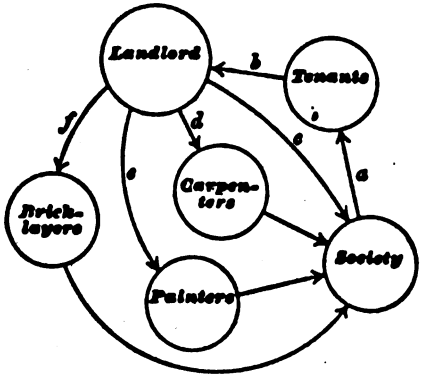


FIG. 4.

case the landlord spends one portion of his rents for his own support and the remainder in building new houses. The tenants derive their income by rendering services to society at large, no matter what particular persons. The flow of those particular moneys paid for rents is represented by the vein from society to the tenants. That portion of the landlord's income which he spends for his own sustenance is represented by the vein *c* drawn from him to society at large. But in building houses he employs bricklayers, carpenters, painters, lumbermen, and so forth. If we include the lumbermen with

the carpenters, the brickmakers with the bricklayers, etc., which we do merely to simplify the diagram, we may consider three classes of men to whom go the three flows *d*, *e*, *f*. These three flows, together with the fourth one, *c*, going directly to society, are equal to the flow *b* to the landlord. All the classes of men who build the house draw their sustenance from society, so that we have the outflow from society to the tenants compensated by four inflows, thus completing the circuit.

As in the former case, we might have subdivided the flow among many hundreds or thousands of different classes, including the iron-founders, owners of iron ore, managers of saw-mills, land-owners, etc. The reader can do this to any extent he desires, when he finds it necessary to consider the effect of the operation upon any particular class of men. But this further subdivision does not change the total amount of the flow, but only splits it up among a greater number of classes.

ILLUSTRATIONS AND EXERCISES.

1. Our government is employing a portion of its taxes in building up a navy, principally of iron. Draw a diagram showing the principal classes of people through whom the money thus levied goes back into the pockets of the taxpayers, and the lines of flow.

2. Draw a diagram showing the changes in the flow if, in lieu of building the navy, our government expended its taxes in erecting fortifications and supplying them with heavy guns.

3. A government being about to engage in war, a man of great wealth employs a portion of his income from houses and lands in equipping a regiment of cavalry. Draw a diagram representing the flow thus arising.

4. Draw a diagram showing the various classes of people among whom the money paid for a coat may be considered as divided.

5. Do the same thing with the money which the inhabitants of a city pay for bread. [In the last three questions there is not necessarily any return flow to be drawn.]

CHAPTER III.

VARIATIONS IN THE EQUATION OF SOCIETARY CIRCULATION.

13. It is necessary at the outset that we have clearly in mind the results reached in the last two chapters. They may be summed up as follows:

I. There is a certain definite mass of money, notes, and credit in circulation, the amount of which, in dollars, we call the volume of currency, and represent by the symbol V.

II. Each dollar of this mass circulates with greater or less rapidity. The average rapidity we represent by the symbol R. We conceive R to represent the average number of times which each dollar changes hands in the course of the year.

III. It is necessary to the well-being of a community that a certain sum total of transfers of wealth and services should be made between its members. The total of these transfers during the unit of time, measured in dollars of absolute money,—that is, on the unit scale of prices,—is represented by the symbol K.

IV. Representing by P the ratio of the actual scale of prices to the unit scale, the value of the absolute dollar measured on that scale will be equal to P. The amount of business expressed in the current scale of prices will then be $K \times P$.

V. This being the case so long as all the processes of buying, selling, incurring debts and paying them go on at a regular and uniform rate, we have the equation

$$V \times R = K \times P.$$

14. All four of the quantities V, R, P, and K are subject to change. Let us first consider the changes to which V, or the total volume of the currency, is subject. Were no money or credit ever introduced into or withdrawn from the circulation, no change could occur in its total volume. But in the actual

case a circulating dollar may go out of the regular course of circulation in any of the following ways:

I. If it is a coin dollar, it may be withdrawn through being melted into bullion or exported to a foreign country. Since we are considering only the operations within a certain community, we regard money as outside the field of our circulation when it passes outside the community. If, as we might well do, we suppose our community to include the whole world, then there would be no diminution of the total volume of the currency by the export of coin. But there would still be a diminution whenever coin was melted down.

II. Credit-money is withdrawn by the payment of debts to banks. If a merchant who has a note in bank pays it in coin, that coin goes into the vaults, and is out of circulation until it is loaned to somebody else. If he pays it in bank-notes, the same thing is true. If he pays it by a bank cheque, he transfers to the bank a certain credit either on itself or on some other bank. In either case this credit is cancelled until a new loan is made, and thus the volume of credit-currency is diminished by the amount of the payment.

Of course the volume of currency is increased by the reverse operations. Every dollar of bullion which is coined adds one dollar to the money in circulation. Whenever a loan is made at a bank, the amount of the loan is added to the circulation, as already shown in the chapter on banks.

It may be remarked that neither the payment of ordinary commercial debts nor the deposit of money in a bank changes the volume of the currency. In the first case we have only a transfer of money, which the receiver takes for the purpose of transferring it again as soon as he has occasion. The transfer is therefore simply an ordinary money payment. If the money is deposited in a bank, it is true that that particular money does for the time being pass out of circulation. But an addition equal to the deposit is made to the credit-currency by the depositor having the right to draw cheques on the bank, so that the total volume is the same as before.

Hence when the banks discount new notes in greater quantity than the old ones are being paid off, they increase the volume of the currency. The banks are then said to *expand* the circulation. When they demand payment of maturing notes to a greater extent than they discount new ones, they *contract* the circulation.

15. *Changes in Rapidity of Circulation.* Every cause which leads a man to hesitate before spending his money tends to diminish the rapidity of circulation. Every cause which tends to make him pass it off quickly tends to increase it. We now have to inquire whether there are any causes which may be from time to time operative upon a whole community, so as to make all or the general body of its members desirous of exchanging their money more or less rapidly than usual. Business men almost universally believe in such changes. "Disturbance" and "stagnation" of business imply a diminution in R. "Briskness" implies that, so far as those who find business to be brisk are concerned, the circulation is rapid. Conclusions drawn from the experience of men of business in this particular case are, however, rather unreliable, and we must look at the matter more closely.

Money circulates with a normal rapidity, which we may regard as a healthy maximum, when every man who earns money can immediately pay it out with a result satisfactory to himself. Every cause which leads him to doubt what is the most satisfactory disposition to make of his money interferes with his expenditure, and leads him to keep his money longer than he otherwise would. The general rule will be that before he receives his money he forms more or less definite conclusions as to what he will do with it. If anything happens to disappoint the expectations on which those conclusions are based, he is likely to keep his money longer than he otherwise would. Let us see what examples of this we can find.

If in a manufacturing establishment an unexpected disagreement occurs between the employers and the operatives,

the money which the former received in the course of business no longer goes to the payment of the latter, and remains for a longer period on their hands than it would otherwise have done. Thus every strike on the part of laborers tends to diminish the rapidity of circulation. If prices unexpectedly rise in consequence of the strike, purchasers will delay buying, and a still further block in the circulation may arise. In periods of uncertainty, investors of money, that is, purchasers of capital, become apprehensive, and their money lies on their hands longer than it would otherwise have done.

On the other hand, mere "hard times" does not necessarily imply any diminution in the circulation, though they may arise from that cause. When business of some one kind is very dull it may happen that the people who ordinarily spend their money in that particular business are spending it in some other way. It is therefore impossible to conclude with entire certainty whether the circulation is more or less rapid than usual; but we may suppose it true that, as a general rule, when business is dull in all its branches the circulation is less rapid than when it is brisk.

A very potent cause of increase in the rapidity of circulation is the issue of irredeemable money. Such an issue leads, as will hereafter be shown, to a rise in prices. The prospect that prices will rise makes a large number of people anxious to purchase as soon as possible, and thus to obtain all the money they can get. It therefore causes business to be very brisk for the time being. Conversely, the prospect that there will be a fall in prices leads people to postpone buying as long as possible, and thus tends to diminish the rapidity of circulation.

16. Next let us consider the changes in the product $K \times \dot{P}$. Remembering that this product signifies the entire exchange transactions of the community, measured in current dollars, we perceive that it may change from two causes:

I. The actual increase or diminution in the quantity of goods which change hands, represented by K.

II. A change in the general scale of prices at which the goods are sold. This scale is P.

For example, if exactly the same transactions should take place this year as last, but at double the price, then, although there would be no change in the actual transactions, yet, since every sale was made for twice as many dollars, the numerical measure of K × P would be double that of last year. We must therefore carefully distinguish between these two causes as affecting the measure of the industrial circulation. As a general rule the actual exchanges will not vary rapidly so long as things go on in their regular way. It is of course to be expected that in a growing country they will increase from year to year as population increases and production improves. As already shown, there is a certain amount of these transactions which is most advantageous, and in which everything goes on as nearly as possible to every one's satisfaction. So long as this happens it makes no difference, except indirectly, what the scale of prices is. All our current wants would be as well satisfied on a scale of half-dollars as on one of two dollars, always provided that the change is carried through so as to include all services rendered. Practically, however, it is impossible to carry such a change uniformly through, and therefore it is to the best interest of society to have as little change as possible from month to month and from year to year.

17. *Effect of Changes in the Volume of the Currency.* In the social organism demand is exercised only through the instrumentality of the currency. Whoever purchases anything in market must have the money to pay for it, either in hand or in prospect. Since, then, his power of demanding is limited by his power of commanding money, we may consider money as in some sort the *instrument of demand*. We have now to consider the effect upon demand, price, and supply produced by changes in the amount of money in circulation, or the *volume of the currency*.

To make the state of the case as clear and simple as possible,

suppose that a beneficent government or any other power should distribute five dollars in paper money or coin to every person within its sway: what would be the consequence? Firstly, since a very great majority of the recipients would feel the want of something which the money could buy, they would proceed to purchase the necessaries of life from the dealers. The latter would therefore find their stores unusually crowded, and would speedily have to send to their wholesale dealers for an increased stock. The latter, again, would call upon the producers for an additional supply of goods. The result of this increase of demand would, as shown in III. 17, 21, be a rise in price.

We might also expect an increase in the production, and therefore in the supply. This expectation, however, would probably be disappointed, because, by hypothesis, each and every producer has his five dollars and, for the time being, would be more anxious to buy something with it than to keep up his business. So long as everybody crowded to the stores to buy, everybody would have to leave off work, for a while at least; and although the prospect of an increased price would be an inducement to produce more, yet, on the other hand, the feeling of increased wealth would lessen the stimulus to hard work, and would therefore counteract the action of that cause. We should therefore have two effects from this influx of money: firstly, a general selling off of the store of products through the channels of business; secondly, a general rise of prices.

This rise of prices would affect different classes differently according to their position. The man who promptly spent his money would be the richer; the man who did not spend it until after prices had risen would not be so well off. Nearly every one engaged in trade would profit by the increased prices, and be encouraged by the increase of his business. Workers for wages and men on salaries would find the week following that, owing to the rise in prices, they were unable to purchase as much as before. Possibly in one or two weeks they would find their whole gift absorbed in the increased prices they would have to pay, so that they would be worse off than before. They

would therefore be compelled to demand an increase of wages which they might ultimately get after more or less suffering. The general selling off of goods would result in the scarcity of a great many things that people who did not buy them at the time would want, and this would have to be made up by increased work in some directions.

The final result would be that all prices and all current wages would rise in nearly the same proportion. Each individual would therefore be able to command no more of the necessaries and comforts of life than before he had received his five dollars. So far as current operations are concerned, neither harm nor good would on the whole be done. Some would gain and some would suffer.

The case is different when we consider future debts and payments. Every person who had loaned money would, when he received it, find that he could purchase less of the necessaries of life than before. He would therefore be a positive loser; the debtor would be able to command the money with less labor, and would therefore be a gainer.

The reverse effect would result if the volume of the currency were diminished by taking money from the community. There would be a falling off in the sales of all dealers, and hence a depression in trade generally. The falling off in demand would lead to a fall of prices, and wages would have to be lower or production would be temporarily stopped. Debtors would lose by having to work more, or sell more goods to command the money which they had agreed to pay; and creditors would gain by being able to purchase more with the proceeds of their debt.

18. *Effect of Varying Indebtedness.* In establishing the equation of the societary circulation, it was assumed that the payment of debts throughout the organism kept pace with their incurrence, so that the two balanced each other. Now this is not always the case. The history of commerce shows periods of great buoyancy of feeling and tendency to specula-

tion, when men of business incur debts on a larger scale than usual. Since every debt is incurred on account of some transfer of goods or services, for which no money payment is made at the time, it follows that the whole mass of indebtedness represents that portion of the industrial circulation which has not yet been balanced by the monetary circulation. At the same time, as already remarked, if this mass of indebtedness is not increasing, the two circulations must still balance each other, because the unbalanced portion of the industrial circulation, for which indebtedness is being incurred, is then balanced by the equal payment of former debts.

But if the mass of indebtedness is increasing, there is then a portion of the industrial circulation which is not balanced by the monetary flow at all, and thus the equation is disturbed. How important the consequence of this is will be seen by reflecting that if people stopped paying off their old debts, and bought everything on credit, the monetary flow would for the moment entirely cease. This is of course an extreme case. But let us suppose as a possible case that one fourth the volume of current business is done on credit, while the old debts are left standing. The result will be that the industrial flow will be to the monetary flow in the ratio of 4 : 3. If before this state of things commenced the two flows balanced, then when the speculation begins there will be an apparent redundancy of the monetary flow, because the volume of currency suffices for the flow 4, while only the flow 3 is required. The result will be the same as in the case of an increase of the volume of the currency; that is, a universal demand for commodities of all kinds, with a tendency towards a *rise* of price.

When the indebtedness is to be paid off the reverse effect occurs. If the volume 4 of regular business is to continue, and a volume 1 of indebtedness is to be discharged, there will be a call for a monetary flow represented by the number 5. But, on the scale of prices established by the speculation, the actual volume of currency only suffices for the volume 3 of exchanges. Thus arises a state of things to be subsequently discussed.

19. *Fundamental Law of Value of the Total Volume of Currency.* The law which would determine the amount of variation in wages and prices in every case, after things had been readjusted on the new basis, can be got at by considering that in the industrial circulation nothing would really be changed except the scale of prices. The quantities purchased being the same as before, K remains unchanged. In the equation $K \times P = V \times R$, R also would be unchanged; whence it follows that the rise in the price P would be proportional to the increase in the total volume V of the currency. For example, if in the beginning the total volume of the currency had averaged $10 per capita, then a gift of $5 to every person would add 50 per cent to the volume of currency. To restore the equilibrium, the scale of prices, represented by P, would have to be increased 50 per cent also. If, instead of adding 50 per cent to the currency, it had been doubled, prices would double. After the equilibrium was restored every two dollars would do the same work which one dollar had done before. Leaving out the case of debtors and creditors, and the temporary disturbance before equilibrium was restored, everything would be readjusted on this basis of double prices.

Since the volume of currency and the prices would be increased in the same proportion, it follows that the quantity of goods whose value would equal the total volume of the currency would remain unchanged. We may express this result in the following form:

When the volume of the currency fluctuates, other conditions being equal, the purchasing power of each unit of money varies inversely as the whole number of units, so that the total absolute value of the whole volume of currency remains unaltered by changes in that volume.

The question now arises, What fixes this absolute value of the total volume of currency? To answer this let us return to the equation of societary circulation, $V \times R = K \times P$. Here R represents the number of times that a dollar changes hands in a year. If we divide the year by R, we shall have the

average length of time that a dollar remains in one man's hands. If we take this period instead of one year as our unit of time, we shall have $R = 1$. K will then be the total value of the exchanges during this period, measured on the unit scale for which $P = 1$. Thus the equation will become $V = K$. We conclude:

The absolute value of the total volume of currency circulating in a social organism is equal to that of the total industrial circulation of the organism during the average time that a piece of money remains in one man's hands.

EXERCISES.

1. If the rapidity of circulation should be doubled, what change would be made in the volume of the currency in order that the same business should be transacted on the same scale of prices? (Deduce the result from the equation of societary circulation.)

2. Show how the answer to the above question follows from the second theorem of § 19.

3. When the volume of the currency increases, the equation

$$K \times P = V \times R$$

can be kept up by increasing K as well as by increasing P; that is, by increasing the volume of business transacted as well as by raising the price. Show why it is that it is P rather than K which responds to the stimulus of an increase of V.

4. Do you interpret the first theorem of § 19 as meaning that the absolute value of the whole volume of currency remains unaltered even when population and business increase? If not, how will this absolute value change in this case? Apply your answer to the second theorem.

5. If a continually increasing volume of business has to be transacted with an unvarying volume of currency, what will be the effect on prices?

6. If producers, laborers, and dealers of every class should combine to raise prices ten per cent, and refuse business on any other terms, what effect would this action have on the amount of business transacted?

7. If everybody believed that prices were going to fall, what effect would this belief have on the rapidity of circulation?

8. If a large portion of the material currency in circulation consisted of interest-bearing bank-notes, what would be the effect on R and P?

CHAPTER IV.

THE MEASURE OF DEMAND BY ABSOLUTE VALUE.

20. Most of the economic causes which we have heretofore considered produce their effect by or through their influence upon demand. Although the theory of this influence may be regarded as entirely contained in the separate results of the preceding chapters, yet, in order to give entire precision to our conclusions, it is necessary to bring our separate results together, and show how they coalesce into a single theory of demand as a mathematical quantity. Let us begin by repeating our definitions and conclusions respecting demand given in the opening chapter on that subject.

The **demand** for a specific commodity, considered as a mathematical quantity, means *how much* of that commodity can be sold—

In a definite market, say New York, Chicago, or the entire country,

During a fixed period of time, say one year,

In a certain condition of society or state of the market,

And at a certain price.

Regarding the principal places or combination of places which we take as our market, and the period of time, as fixed quantities whose changes we have no need to consider, we see that the amount of the demand will depend upon and vary with the third and fourth conditions, namely, (1) the price charged, and (2) the condition or wants of the public in relation to that commodity. These innumerable varying conditions may be summarized under the single comprehensive and therefore somewhat ill-defined term *state of the market.*

With regard to the first cause we have found the law to be a very simple one, namely, the higher the price the less the

quantity demanded. We may assume the action of this cause to be thoroughly understood, and to need no further elucidation. It is the second group of causes, comprehended in the term "state of the market," with which we are concerned. In accordance with a general principle of scientific inquiry, we have to investigate the action of this cause on the supposition that all other conditions are equal. We must therefore suppose that in our market, and during the period which we consider, a fixed and invariable price is put upon the commodity. The quantity sold will then vary only with the state of the market. If more people are buying flour at five dollars per barrel this month than last month, it will show that there has been some change: perhaps a foreign demand; perhaps some new use for flour; perhaps greater ability on the part of the public to buy; perhaps any other of an innumerable series of causes. We thus get an idea of a demand which does not mean quantity really sold, but *the quantity which would be sold supposing the price to be fixed and invariable.* This is the ordinary mercantile meaning of demand as a quantity, and must not be confounded with the definition formerly given. An example will make the distinction clear.

The producers of nickel may be able and willing to turn out the same number of pounds of that commodity annually, year after year. Then if, from any cause whatever, the state of the market so changes that there is an increased demand, the producers will raise the price until the demand is brought down, as before, to the supply, which we suppose to remain invariable. We should then have the demand and price rising and falling together, in accordance with the second law as laid down in III. 16. The difference between the two definitions of demand will then be seen in this form: Since, by our hypothesis, the quantity really sold is the same in the two cases, the actual demand, as above defined, has remained the same. But, in mercantile language, there has been a change in the state of the market, such that more nickel would have been demanded at a fixed price than before, and thus, by the second method of

measurement, demand has increased. We see, then, that there are two distinct ways of measuring demand between which we must carefully distinguish. Both are perfectly legitimate, and may be useful if we do not confound them. A clear conception of each is all that is necessary to avoid confusion. These conceptions may be assisted by calling the one the *actual demand*, or the *quantity sold*, and the other the *market demand*, which expresses the wants of the public. The market demand will then be a hypothetical quantity, expressing the apparent want of the public for a commodity, and the actual demand will be the quantity really sold.

21. The relation of these two measures of demand can be made quite clear by the use of algebraic symbols. It has been pointed out (III. 15) that the general average relation between demand and price may be approximately expressed by saying that demand varies inversely as price. The fact that two quantities vary inversely is expressed algebraically by saying that one is equal to some constant quantity divided by the other (III. 7). Hence if we put

P, the price at which a commodity is offered,

D, the quantity which will be bought at that price,

then the relation between D and P will be expressed by such an equation as

$$D = \frac{M}{P}, \qquad (1)$$

where we put M for some constant quantity. So long as M remains unchanged, D will increase as P diminishes, and diminish when P increases.

In order to learn how much of the commodity can be sold at a given price, say $3 per pound, we must know M as well as P. Our equation will be, in this case,

$$D = \frac{M}{3}.$$

The quantity M is what we have called the market demand, or the public want for the commodity. If we suppose P to

stand fixed at $3, then D will increase when M increases, and *vice versa*. The greater the number of people, the more they want the commodity, and the better able they are to buy, the larger M will be. It therefore depends on all the circumstances which induce people to buy, except the price charged for the commodity.

22. We have already seen that in the long-run, and omitting certain exceptional cases, the quantity of each commodity sold is necessarily equal to the quantity produced. Hence when we speak of the actual demand we cannot correctly talk about variations in that demand without corresponding variations in the supply, because that demand is equal to the supply. We cannot correctly say that any cause will increase the demand unless it increases the quantity of a commodity brought to market and sold. Since, in the discussion alluded to in the beginning of this chapter, what is called demand is the desire of the public for certain services or commodities which are supposed not to depend upon the quantity of those commodities produced, but upon the state of the market, it follows that it is the market demand which is there considered. We shall therefore in the present chapter use the term *demand* to signify the market demand, and so shall suppose it to express a certain condition of the market, having no reference to the real market price, but expressing how much of the commodity can be sold in a fixed period of time at a fixed price.

Accepting this definition, we have pointed out a cause which immediately affects demand. With every addition to the flow of the currency there is an increased demand for all commodities, no matter whether the augmentation of the flow arises from an increase in V or in R. Hence we may say the market demand for things in general is proportional to the flow of the currency, as already defined.

We have called the market demand *hypothetical*. The reason is clear. The quantity actually sold cannot exceed the supply. Therefore if we suppose a constant and rapid increase of

the currency constantly going on, without any increase of supply, while the price is fixed, the whole supply of goods on hand might be speedily sold out and the operation of buying would have to stop. In actual trade the price always rises under such circumstances. Hence the case of a fixed price is necessarily hypothetical. But though hypothetical, it affords us a method of measuring a certain quantity, namely, the ability and willingness of the public to buy, which is measured by the quantity they would buy at a fixed price.

The question now arises, Is this measure of ability and will a true one? are the public really any more able and willing to buy when the flow of the currency is increased than they were before? The answer is that this depends on how we are to measure this ability and willingness. In a certain sense they are more so; and in another, and perhaps more exact sense, they are not more so. We have here our former case of measures by a varying foot-rule. If we agree to measure by a foot-rule which increases and diminishes in length from day to day in spite of all we can do, it is certain that any object that we measure will contain more feet one day than another. But if we consider length measured by an absolute standard, we may regard objects in general as being invariable in length. It may then be perfectly true that a piece of timber would measure more feet one day than another, although its real length should remain unchanged.

So in the present case. If we measure the ability of the public to buy by the quantity of a commodity which they will purchase in a year at a price fixed in dollars, then the measure of that ability will undoubtedly increase with the flow of the currency. With every increase in the flow they will be able to buy more, because they have more dollars to buy with; with every diminution in the flow they will be able to buy less; just as when we measure a piece of timber, the shorter the foot the greater the measure.

But if we adopt an absolute standard, if we consider the quantity which can be bought, not at a price fixed in dollars,

but at a price fixed by a tabular standard of value, as described in Chapter II., then there can be no change in the general ability of the public to buy produced by changes in the flow of the currency, because the money price will then keep pace with the flow.

These same statements apply to our measures of market demand. Let us recall the definition of this term. When the quantity of goods which can be sold at a fixed price increases, we say that the market demand increases; when this quantity diminishes, we say that the market demand diminishes. Now if by the words "fixed price" we mean a fixed number of dollars, without reference to the absolute value of those dollars, then evidently our measure of the market demand becomes deceptive. Suppose, for example, that the volume of the currency is doubled, and that in consequence all measures of value in currency have doubled. Then every seller would meet a great rush of people to buy his goods. He might therefore say, "The market demand for my goods has doubled." But in reality he would be offering his goods at half the old price, and he could at any time cause the same rush of buyers by reducing his prices to one half. Hence in order to compare two states of the market at different times with respect to any commodity we must reduce the two prices of the commodity to the same tabular standard of value. When we find that a certain cause stimulates demand we must ascertain whether it does this merely by increasing the flow of the currency or by bringing other causes into play.

23. We now recognize two measures of market demand: the *current measure*, expressed by money, and varying with everything that affects either the volume or rapidity of circulation; and the *absolute measure*, which is expressed, not in money, but by the general average prices of commodities and services. It is necessary to have this distinction clearly in mind in all our discussions of the effect of economic causes upon demand. Causes which act through the general circulation by

adding to its volume or stimulating its rapidity affect the current demand, but not the absolute demand. Causes which act through supply, or by changing the wants of the community, by opening up new markets or by finding new uses for things, change the absolute demand.

This distinction may be made clear by returning to the algebraic equation and again considering the market demand M. The fact that this quantity varies directly as the flow of the currency is expressed by saying that it is equal to some constant quantity multiplied by that flow (II. 6). If we put

N, this constant quantity,
F, the flow of the currency,

we shall therefore have, in equation (1),

$$M = N \times F \qquad (a)$$

and

$$D = \frac{N \times F}{P} = N \times \frac{F}{P}. \qquad (b)$$

Thus if we call P′ the quotient $\frac{P}{F}$, we shall have

$$D = \frac{N}{P'}. \qquad (c)$$

Now let us notice the relation of these quantities. Equation (*a*) expresses the fact that if the flow F of currency increases, the market demand M will also increase. But this presupposes that we measure this market demand by the amount we can sell at a fixed price in current dollars. When the flow of the currency increases, these dollars become less valuable; so that the price in absolute measure is $\frac{P}{F}$, or P′. Hence the equation (*c*) expresses the actual demand when the price is reduced to absolute measure by allowing for changes in the absolute value of the dollar, and this demand is independent of the flow of the currency.

The conceptions of the three measures of demand just described are of such fundamental significance that we shall recapitulate and condense them.

The *current market demand* for a commodity is the quantity of that commodity which a community would purchase in a year at a price fixed in dollars.

The *absolute market demand* is the quantity the community would purchase at a price varying to keep pace with the absolute value of the dollar.

The *actual demand* is the quantity which, as a matter of history, the community really does purchase.

24. The great importance of the above principles arises from the fact that the public look upon increased demand as an economic good, and upon diminished demand as an economic evil, and are thus prone to consider demand as a measure of prosperity. When the merchant finds more people coming to his store for his goods, and the laborer finds more people to pay him what he considers fair wages, there is a feeling on the part of both that they are benefited. Of course there is no corresponding feeling on the part of the buyers and the employers that they are injured, because if they had such a feeling they would not come forward with their demands. The fact that they do come forward demanding goods or labor shows that they expect to reap an advantage thereby.

The reverse is true when the employer ceases to come forward, and the customer, having spent his money, stays away from the store. The merchant and laborer then feel that their prosperity is diminishing.

Thus arises a feeling on the part of the community at large that those economic causes which stimulate demand should in some way be promoted, as being beneficial, and that those which diminish it should be avoided, as productive of evil. Since, then, with every increase in the volume or rapidity of the currency there is an increased market demand when measured in the usual way, and in fact in the only way in which we can practically measure it for the time being, it follows that, by a natural process, there is in society a certain tendency to favor every measure which will increase the volume or rapidity of the circulation.

Both of these cases indicate changes in the current market demand, but we cannot tell whether they indicate changes in the absolute market demand until we know the causes at play.

We have just spoken of measuring demand in currency as the only practical way of doing it for the time being. This is necessarily the case. We have no way of measuring demand at the moment in absolute measure, because it requires an elaborate statistical investigation of the prices of commodities, which there is no authority to undertake. We are in the position of a community which has no other than the varying foot-rule with which to measure its piece of timber, and which is therefore obliged to accept those measures for the time being, and to conclude upon absolute lengths, not directly from the measures, but from long-continued observation of their variations. So in economics, although we are obliged to measure the current intensity of demand in terms of the circulation, yet we know that we are thus liable to be deceived, and that we must refer it to absolute measure whenever we are to get correct results.

25. We have now to show that changes in demand arising from changes in the flow of the currency neither lessen any avoidable evils nor lead to any attainable benefits. We say "avoidable evils" and "attainable benefits," because with these alone are we concerned in economics. If we look closely, we shall see that the current aspirations on the subject are directed towards a Utopia. People have in mind a certain ideal state of things, in which every laborer is constantly employed, every merchant has as many customers as he can wait upon, and every railway as much freight as it can carry. I say this idea is purely utopian, for changes in the demand and supply of various commodities are absolutely unavoidable. The people want more of one thing to-day and more of another thing to-morrow; next year they will leave off wearing something that they wore this year and take to something new. One month they will lay in

a three months' supply of goods, and perhaps save their money for the two months following. Thus, as already shown, the processes of production do not go on in a continuous stream, but by a series of waves. Necessarily the employment of laborers who are carrying on the processes vary in the same way. Now this class finds itself with nothing to do, and now that class. There is therefore but one possible way of insuring that every laborer shall be constantly employed. It is to require that he shall work every day for any wages that he can get, whether it is ten cents or ten dollars, and shall be put at work by the authorities if he is any morning found idle after the hour for commencing work. Thus the idea of remedying this evil is purely utopian. No practical benefit can arise from discussing any measures looking to finding employment for everybody all the time.

What we are to remember in this connection is that the difference between the two measures of demand for labor corresponds to a difference in the measure of the wages of labor. That is, we may measure the wages of the laborer either by

The amount of money which he can receive for a week's work, or

The quantity of commodities which he can buy with a week's wages.

The first is the popular method of measuring. When we say that wages are higher in America than in England, we mean that the laborer can get more money for a week's work in America than in England. But it needs no argument to show that this is not the true measure of his prosperity, and that the real question is, How much sustenance can he command in the respective countries? It is also evident that any cause which enables him to command more money for a day's work, but which at the same time increases the amount which he must pay for his week's food and clothing, does not really do him any good. He may indeed, through his ignorance of economics, be deceived into thinking that he is benefited by the higher wages; but this is a kind of deception

which he will not long submit to. Now a very little examination will show us that an increase of the flow of the currency can at best only raise the laborer's wages in money, and cannot increase the amount of subsistence which he is able to command with his day's work. That this must be so will be seen by looking at the subject from the communistic point of view (II. 54). The community at large, of which laborers of some kind form the largest portion, can be fed only with the food actually raised, and clothed only with the cloth actually made. But these actual quantities are dependent upon and limited by physical circumstances and cannot be altered by changes in the currency.

To show how the same result follows from the point of view we have been taking in the present chapter, suppose an increase in the flow of the currency to take place just as an unemployed laborer has made up his mind how many dollars he considers an equivalent for his week's work. If he gets employment under the stimulus of the increase and goes to work, then, before he can spend his week's wages prices have risen a little. They rise still more before he can spend his second week's wages, and thus he continuously finds himself able to buy less and less. He is therefore no better off than if he had gone to work in the beginning on unsatisfactory terms, and is obliged to demand an increase of wages, and probably be thrown out of employment, just as he was before in his efforts to get the present rate. He is therefore in no manner benefited by the increase of wages.

So also with the general prosperity. An increase in the flow of the currency will cause a temporary wave in the flow of goods from the manufactories to the consumers. But this wave will inevitably be followed by a depression, and is therefore solely temporary in its effects. The only causes which permanently advance national prosperity are the slightly increasing improvements in production, new railways, new farms, new warehouses, improved machinery, improved organization of labor.

CHAPTER V.

OF INDIVIDUAL INCOME AND EXPENDITURE.

26. By the annual **income** of a person is meant the net sum of his wages, gains and profits during a year, whether derived from his own labor, his business management, or the interest upon his capital. To find its amount we must subtract from the sum total of moneys received by him in payment the amount which he has had to expend in order to transact his business and keep up his capital. It is therefore the sum total of the monetary flow to him, diminished by the flow from him for the purposes last mentioned. The amount to be subtracted on account of business expenses and capital from the individual monetary flow is very different among different classes of persons. One whose sole occupation is to work for wages or a salary has no payment to subtract. His income is the same as the monetary flow to him. The other extreme is found in the case of men who transact business on a very large scale. They are continually buying and selling, and their income may be only a very small fraction of their transactions—so small a fraction, in fact, that it may be completely swallowed up by an unexpected rise or fall of prices.

27. The question what payments are to be considered as necessary to the continued transaction of business and the preservation of capital may be a difficult one in special cases; but the guiding principles may be made quite clear. In estimating net income it might be claimed that we should subtract from the total receipts of the individual the amount necessary for his own sustenance. But this would be wrong in principle, because the very object of determining income is to learn how much the person can afford to expend on his own sustenance without

encroaching upon his reserve of capital or diminishing his power to carry on business. Hence we must leave unsubtracted all that he expends in improving his capital or increasing his business.

As one example let us take the case of a merchant. At the end of a year he finds that he has sold goods to a certain amount. The principal items which he has to subtract from this amount in order to obtain his income are these:

I. The prime cost of the goods he has sold.

II. Rent of storehouse, insurance, and other expenses attendant upon the simple preservation of his stock in proper condition for sale.

III. Wages to clerks and others engaged in selling goods or transacting his business.

IV. Stationery, postage, losses from bad debts, and other miscellaneous items incident to the transaction of business.

After subtracting these and any other items necessary to the conduct of his business from the sum total of his sales, the remainder will represent his net income.

In the case of a manufacturer the same items will occur with some modifications and additions. Instead of the item "prime cost of goods sold" he will have the prime cost of all the raw material manufactured and sold. He will also have the very important item "wear and tear of machinery and other forms of fixed capital." This item is necessarily somewhat indefinite. If his machinery has been going during the whole year without any repairs, it must have deteriorated, and the amount of deterioration must be estimated as best he can. If he has made large improvements in his factory, and paid for them out of his profits, such payment should not be subtracted, but should be considered as an investment of his surplus income.

In the case of great changes in price the question will sometimes arise, What is to be considered as the measure of the capital kept up? Suppose a merchant to find at the end of the year that although the actual stock of goods on hand is nearly the same as at the beginning, yet their prime cost is greater,

and their cost if purchased now would be double. Is he to consider this increase of value as a profit earned and applied so as to double his capital? We reply, Not if the rise in prices is the result of a general increase in the scale of prices arising from a diminution in the absolute value of the dollar. In this case there would be no increase of his actual capital, but only an apparent increase arising from his measuring his capital by a depreciated standard. If, however, the rise of prices is confined to the particular stock of goods he deals in, and grows out of some scarcity in the supply, the greater value would represent an actual increase of his capital, and might be counted as a profit, and therefore as an addition to his income.

In other cases we have to consider whether an expenditure was incident to the transaction of business, or was applied to the sustenance of the person or his family. For example, if a physician who receives annually $3000 in fees has to pay out $500 of this amount on account of a horse and buggy in which to visit his patients, his net income is only $2500. But if he should visit his patients on foot and employ the horse and buggy to give his wife and family a daily airing, we should regard that expenditure as coming out of his income, and say that his net income was $3000. The difference in the two cases is that in the one the horse and buggy are supposed to be used for business purposes and not for enjoyment, whereas in the other they are used for enjoyment.

Corporate Income. Another difficult case arises when we consider the income of companies. The preceding rules apply to any legal person. A railway or manufacturing company may have its own independent income. Such income, in the regular course of business, is supposed to be divided at stated times among the shareholders as dividends, and thus to become a part of their regular incomes. But very often the profits gained by the company, instead of being so divided, are employed in increasing the capital or enlarging the business of the company. In such a case are the stockholders to be regarded as in receipt of an income from their shares? If so, how is

the amount to be determined? Since they get nothing at all from the company, it might seem that the profits of the latter should not be reckoned as income to them. On the other hand, if they have a right to their prospective share of these profits, and this prospective right has a market value, they should be considered as in receipt of an income equal to the increase in the market value of their shares arising from the increase of the capital owned by their company.

28. *Expenditure of Income.* The income determined in the preceding section is a certain amount of money which the individual can expend at his own pleasure without diminishing his productive power. There are two distinct ways in which he can spend it:

I. In sustenance for himself, his family and friends.

II. In increasing the amount of capital which he possesses.

We have found his net income by subtracting from the total monetary flow to him the total payments necessary to the transaction of his business and the preservation of his capital. The remainder is expended in the two ways just mentioned. We have then three great classes of payments made by him, namely:

Payments on account of business and capital;

Payments for sustenance;

Payments in increase of capital.

These together make up the total monetary flow from him, which is equal to the flow to him, as has already been shown. These flows are illustrated in the diagram opposite. From society to the merchant goes a flow of currency for the purchase of goods. From the merchant goes one flow to the jobbers who supply his goods, another to his clerks, and another to capitalists who perhaps own his warehouse or have loaned him money. These flows represent what he pays out on account of business. The dotted line to producers of capital represents that portion of his flow which he expends in increasing his capital. He may merely increase his stock of goods, and then, so far as he is concerned, the producers of his

capital are the jobbers themselves. If he builds a new store with his profits, these producers will be bricklayers, carpenters, and mechanics. The heavy dotted line represents his pay-

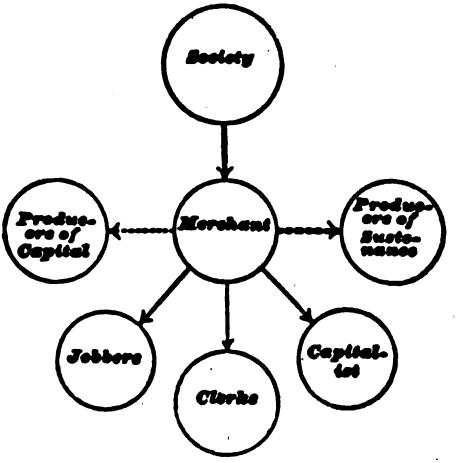


FIG. 3.

ments for the sustenance of himself and family. The sum total of the five flows from him makes up the single flow from society to him.

29. There are two laws of income which are fundamental in economics. In applying the term "law" to these propositions, it must not be understood that they are absolutely true, irrespective of the interpretation which may be put upon them. They are rather to be regarded as approximations to general truths which require, however, to be interpreted in each particular case. The first law which we shall consider may be expressed in the following form:

As a general rule the income which an individual gains is equal to the value which he adds to the sum total of production through the use of his own faculties and capital.

There is perhaps no proposition in political economy which runs counter to common ideas more than this. It is a familiar

fact that the largest incomes are gained by men whose function in production appears to the superficial observer quite insignificant. From the point of view of the average man the labor is the sole measure of the product, and the man who without labor gets a portion of the product gets it without rendering an equivalent service.

Since the first impulse of the student ought to be to point out certain obvious limitations to this law, we may begin by considering them. The first question will be what contribution to production is made by a man who makes a fortune merely through operations in the stock market. The answer is that so far as this man's interests are concerned, the case is truly an exception. If the operations were merely speculative—that is, if there has been no real change in the value of the stock—the people with whom he has been dealing have lost an equal amount. Therefore the algebraic sum total of the gains of all the classes engaged in these speculations will be zero. Now, as already pointed out, we are in political economy principally concerned with sums total and not merely with the interests of this or that individual. Hence this error will not affect the sum total.

Let us suppose, in the second place, that our operator has purchased a stock supposed to be worthless and, having held it a year or two, it has without any effort on his part become of great value. This means that it has become useful to mankind while he was the owner. In order, therefore, that the law may be correctly applied we must include in production all increase of value produced by any circumstance whatever, and must credit this increase to the owner of the object whose usefulness was enhanced. This remark applies to all cases of the ownership of land, real estate, machinery, ores, etc., the value of which may change without the application of labor, merely through the movement of population and the action of supply and demand. The law must therefore, in order to be correct, be understood in some such form as this: The total income of the community comprises all the values produced by its labor *plus*

all the increase in the value of fixed property brought forth without labor *minus* all the decay in value which has occurred. Leaving out speculative operations, gambling, etc., which merely change the ownership of property, every man's income is then the measure of what he adds to the total production.

The most simple consideration by which the law can be illustrated is this: no person can gain income except by selling to some other person something which this other person for the time being considers to be an equivalent. Take for instance the case of a railroad manager who is worth many millions of dollars. If he has not gained this fortune by knocking people down and picking their pockets, or by burglary, which of course we assume, then he must have gained every dollar through some person paying a dollar for his services. All his millions have been gained from the millions of people who travel on his road and the thousands who purchased its stock, and every one of these millions and thousands paid his dollars because he thought it advantageous to himself so to do. He was either gaining an advantage or saving himself from a disadvantage. He either reached his place of business betimes in the morning, or he was saved the expense of having to stay in the city overnight, or of hiring a carriage to take him home.

30. SECOND LAW OF INCOME. *The entire amount paid by the purchaser for any commodity may be considered to be divided as income among the persons who have been instrumental in the production of that commodity, each man's share being his compensation for the labor expended and capital employed in such production.*

We may show this most easily by a diagram of the flow pertaining to an expenditure of $100 in the purchase of boots. Let us suppose that the raw material, principally leather, which the shoemaker consumed in making the boots cost $40; and that he had to pay $20 to an assistant and $5 to the owner of

his shop as rent. This would leave $35 as his own income from the boots.

The payment made to his assistant and shop-owner may, for simplicity, be considered as made solely on account of their services. In the case of the owner the services did not merely consist of labor, but principally of the interest on the capital he had invested in the shop. We may, if we choose, consider the income from capital as a separate item, but there is no need of our doing it now.

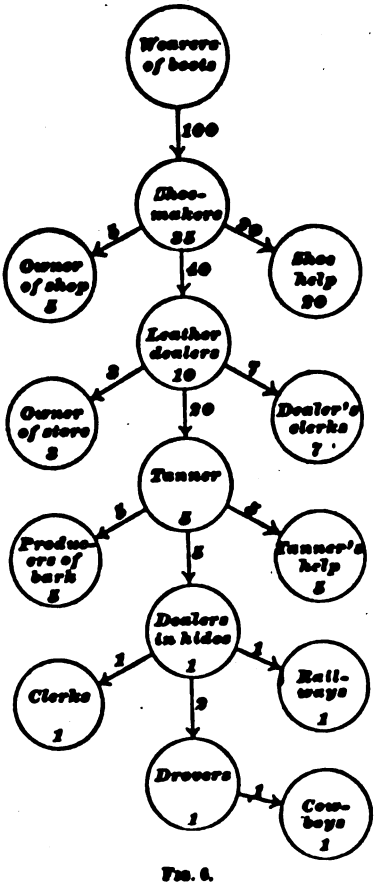


FIG. 6.

We have left the $40 which the shoemaker paid to the leather-dealers for raw material. This is divided in the same way between the owner of a shop, the dealer's clerks, the tanner from whom he purchased his leather, and himself. The division which we assume is shown on the diagram as $3 going to one party, $7 to another, and $20 to the third, while $10 is kept as his own income.

The $20 which he pays the tanner is divided according to the same system. In each class of persons represented by the circles is given their portion of the money. Following the flow to the bottom, we see that the division of the $100 contributes incomes as follows:

To the shoemaker	$35
To the journeyman shoemaker	20
To the owners of shops	6
To the leather-dealer	10
To the leather-dealer's clerks	7
To the tanner	5
To the producers of bark	5
To the tanner's assistant	5
To the dealer in hides, his clerks, the railway owners, the drovers, and the cowboys, each $1, making	5
Total	$100

An important question may arise at this point. The money paid to the purchaser did not divide itself in this way in a continuous stream, because the chances are that the shoemaker paid the wages and rent, and purchased his leather, before he sold his boots. The same thing may be true all the way down the diagram, so that we are apparently tracing the process in a reverse order. If the boots had all burned up before they were purchased, the greater part of the persons represented would have received their income.

But this does not contravene the law laid down. It still remains true that the income of the shoemaker is found by subtracting the $65 which he had previously paid out from the $100 which he received. The same is true all the way down, so that the numbers still correctly represent incomes.

On the other hand, when we consider the future we shall see that the money paid by the purchaser of the boots is a very necessary part of the future income of all concerned in producing them. The shoemaker cannot keep up his purchase of leather or his payments to others unless he can sell his products. Moreover, as a general rule, so long as he continues his sales he will continue his purchases. Thus the interdependence of the various incomes is a necessary result of the case.

The following important corollary may be deduced from the preceding law: *When the price of goods rises, it is certain that some one concerned in their production is receiving an increased income for his services, and vice versa.*

The division of this increase of income among the different parties concerned is partly a question of interpretation. If, next month, the shoemaker gets $120 for the same boots which he sold for $100 the present month, we may consider that increase of income as confined to himself, because he got his leather and employed his help at old prices. But the general fact will be that he could not command this increased price unless leather became dearer. Therefore in the future he must pay the higher prices, and thus the increased income will be divided among most or all of the producers.

The results of the above two laws may be combined in the following conclusions:

I. *Every mass of finished or unfinished products may be regarded as the joint work of the various persons whose services were necessary to the production.*

II. *The value of all such products in the country may be divided among the producers into shares, each share being a part of the income of the person who contributes that share to the product.*

III. CONVERSELY, *we may consider every man's income to represent his contribution to the sum total of the product, and to measure his right to take an equal value of the products of others from that sum total.*

CHAPTER VI.

DEMAND AS THE DIRECTOR OF INDUSTRY.

31. The members of the community generally believe that the public interests are deeply affected by the way in which people spend their money. This belief arises from the supposition that the spender confers a marked benefit on the person from whom he buys. It is supposed that if he spends his money in clothing, tailors are benefited; if he spends it in shoes, shoemakers are benefited; if he carries it abroad, the whole community lose the benefit he might have conferred upon it; if he employs Chinese cheap labor, the Anglo-Saxon race are the losers; and if he invests it, nobody but himself gets any benefit from it. In what respects these current popular doctrines are erroneous will appear subsequently. We begin by considering the question of the effects of different kinds of expenditure from an economic point of view, without reference to preconceived opinions. The investigation is one of the most intricate in economics, and requires for its prosecution that we have clearly in mind a number of conclusions already drawn in previous chapters. These conclusions we shall now re-state for the sake of clearness.

I. The necessary conditions of general prosperity are that a sufficiency of the necessaries of life to support the whole community should be produced, and that each member should be able to command such portion as he is entitled to under the laws which govern the social organism. A sufficiency of a commodity is all that is required. There is no need of piling up more food than the whole community can eat, nor of making more clothes than they can wear out. Therefore increasing prosperity is marked, not by an unlimited increase of the more common necessaries of life, but by gradual improvements in the

quality of these necessaries, and in the quantity of those articles which are commonly considered luxuries. It will of course be understood that no line can be drawn between necessaries and luxuries. These do not form two classes of things, but the quality of being a luxury must be regarded as one which different objects possess in different degrees. When a man makes the first step upward in the social scale, it is not by sleeping in two straw beds after having formerly slept in one, but by sleeping in a better kind of bed. He substitutes finer for coarser clothing, and a family carriage for a cart. As he advances, a silver watch comes into his possession, which, in time, is replaced by a gold one. He may have no more chairs than he had before, but they are of better quality, and books and pictures are added to the embellishments of his house. Lace curtains take the place of the cotton ones on his windows, and his books at last go into a walnut case. The prosperity of any one man is improved when he can add comforts possessing in a higher degree the quality of luxuries; and any class of men is prosperous when all of its members are prosperous. Since, by the natural laws of supply and demand, those things are made which people most want and can best afford to buy, it follows that general prosperity is marked by a general increase in the effectiveness of industry, and that we must expect this increase of industry to show itself in the production of articles which to the lowest grade of men would appear luxuries.

So much for production in so far as it concerns the ability of each man to get command of his share of the product. We have already shown that in the state of things which now exists in this country it is scarcely possible for any industrious man to suffer for the necessaries of life. The only persons who can so suffer are those so weak, miserable, and worthless that they cannot or will not do anything which anybody else wants to have done, or who set so high a price on their services that they can get nobody to employ them.

II. We call to mind that the primary form of capital may be considered as sustenance for laborers; that is, food for them to

eat, clothing for them to wear, and houses for them to live in. In an economic sense the class laborer includes every person who gains a living by his own exertions, and does not live off the interest of his money, or the profits on his investments. Clergymen and teachers are therefore included in the class, as well as mechanics and hod-carriers.

We also call to mind that when the laborer receives money in exchange for work done, this money may be regarded as an order on owners of sustenance to supply the laborer with a corresponding quantity of that sustenance. This order is addressed to the house-owner, who receives it as rent; to the owner of flour, who gives flour in exchange for it; and to the clothier, who gives clothes for it.

In order that the work of the laborer may be profitable, the value of his product, whatever it may be, must exceed the value of all the sustenance which he and his family consume. The measure of the laborer's prosperity is the quality of the sustenance which he is able to command.

III. The demand for various kinds of commodities fluctuates from month to month and from year to year. There is therefore a corresponding fluctuation in the industry which produces those commodities. It has been shown that these fluctuations in industry may be represented by supposing laborers who are engaged in producing one class of goods to change their occupation and produce the other class. This change can be effected either directly, by laborers changing their occupation, or indirectly, by employing more new labor in the new occupation. The result is the same in the two cases (as shown in II. 49). The restrictions to which this change of industry is subject have also been pointed out, and it has been shown that the only case in which any difficulty is met with in effecting the change of employment arises when a higher order of skill is demanded.

IV. It is also necessary that the reader should have clearly in mind the monetary circulation as described in the last two chapters, and the distinction between the *current* measure of demand and the *absolute* measure. The main proposition to be

had in mind in this connection is that demand depends upon the ratio between the flow of the circulation and the price asked; that when the flow diminishes, either through a diminution of the volume of currency, or, what amounts to the same thing, through a diminution of its rapidity of circulation, a general falling off in the demand for commodities in general is a necessary result; also that this falling off has its natural remedy in a corresponding diminution in the general scale of prices, which will immediately restore the demand without any general change in the ability of different classes of men to command the means of subsistence.

32. If in the monetary circulation we consider a payment from one person A to another person B, we may inquire what B does with the identical money he thus receives, and may, in imagination, trace it through the different streams passing from B to other members of the community. From each member the stream will subdivide itself amongst other members, and so on indefinitely, but its total magnitude will remain unchanged. For example, we may imagine that a sum of five dollars being paid to B, he pays one dollar of it to each of five persons. If each of these persons divides it among four other persons, there will be twenty in all who will each receive twenty-five cents of that money. If each of these twenty persons divide the money among five others, we shall have one hundred persons each receiving five cents. In every case the total volume of all the little streams which we consider amounts constantly to five dollars. Of course in practice the division would be unequal, but this would not affect the result when we add up all the payments.

It may be asked, How shall we distinguish this particular five dollars from all the other money flowing from B? The latter was perhaps in receipt of hundreds of dollars from other parties; he puts the five dollars he receives from A into his general fund, and thus mixes it up in such a way that we cannot distinguish between this particular sum and the other money.

The answer to this is that we learn what B does with that particular five dollars by inquiring in what streams the deficiency would have been found had he not received that five dollars from A. It is mathematically certain that if he had not received it he would have had that much the less to pay out to others; so that, taking all his payees together, it is certain that five dollars more are received than would have been received by them had A not made this payment. What is true of these payees is true of their payees; there is a deficiency in the stream amounting to this sum, how far soever we trace it.

Having thus considered the effects of cutting off this stream, so far as it concerns those to whom it would have flowed had it not been cut off, let us consider the consequence in another direction. If A had not made that payment to B he would have had five dollars more either to keep or to spend for some other purpose. Let us first consider the case in which he spends it in some other way. Then his flow to some third person, C for example, would have been increased by the same amount that his flow to B is diminished. He pays either to B or to C, but not to both. We may in imagination trace the payment from A through C and then see it subdivided amongst different classes of persons in the same way that we did when it went through B.

The conception that we must now form is this: We imagine A holding his five dollars and deliberating whether he shall issue it to B or to C. Whichever of the two he decides shall receive it, we may trace it from the receiver as it subdivides itself among other members of the community. We may suppose it, after two or three payments, to be subdivided among the same persons, whether paid to B or to C. After it reaches those same persons the effects will be the same. Any economic difference that may result from the two directions will take place while the streams are divided, and before they join by reaching the same parties. This conception of the stream ultimately reaching the same persons in whichever way paid is introduced for simplicity. As a matter of fact and reason,

when divided among so many men that each one's share is inconsiderable, we may consider it as having reached the same persons.

33. *Purchase of Commodities and Demand for Labor.* In all that precedes we have made no classification of payments according to their object. A distinction is, however, made by economists between payments to laborers for their services and payments for commodities already produced. The ground of this distinction is this: the capital with which commodities are produced is not the money received for selling them, but the sustenance which the laborers consumed while making them. Hence the payments which support labor are not those made to the seller of goods, but those made to laborers to enable them to purchase sustenance. If, then, we consider only the latter class of payments, we must follow the stream of currency through the parties who sell goods until we find it to reach laborers who receive it as wages and who purchase sustenance with it.

This is what we have done in the preceding chapter, where we have shown that every payment for goods purchased may be considered as divided as wages and interest among those instrumental in their production.

Let us now return to the question how we may suppose a payment from A to B to be divided by the latter amongst his employés with a view of finding what laborer it reaches. It is an obvious rule of business that if a manufacturer finds he cannot sell a particular class of goods, he stops making those goods. If he finds goods sell well, he spends the money which he receives for them in helping his operatives to replace the stock which is sold out. Since manufacturers will not allow unsold goods to accumulate without limit, and indeed will make none except what they can sell, we may consider every person who purchases goods of any particular class as placing in the manufacturer's hands the power and inducement to replace these goods by employing men to make a fresh supply of them.

34. We now reach the following fundamental law of employment: *A change of demand from one commodity to another may always be met by a corresponding change of labor from the production of the one commodity to that of the other in so far as this change is possible.*

The way in which the change is brought about, and the conditions to which it is subject, have been set forth in II. 49, 50. Let A be an agent who has money to spend, M a shoemaker, and T a tailor. Also let S be the collection of the individuals from whom the tailors and shoemakers may purchase their supplies. Then if the agent purchases from the tailors, the latter will spend the money so received for food, clothing, and other necessaries, as well as for the means of continuing their business. This expenditure is repeated by a continuation of the stream from M to S, S representing the community in general. But suppose the spender, instead of purchasing clothes, purchases shoes. Then his money, instead of going to the tailor T, will go to the shoemaker M. If now the equilibrium of supply and demand was exact when the purchase was made from the tailor, then the result of buying from the shoemaker will be that a certain amount of tailoring industry is left out of employment, while there is a demand for an additional supply of the labor of shoemakers. To fix the idea, let us suppose that A represents a number of persons such that the demand in question will be represented by the services of a single person. If then a single tailor can change his business to that of making shoes, he will receive the same money as before, and will spend most of it among the same people as before. The supply and demand will then be perfectly equalized, and the monetary circulation among all the people of the community will be the same as before. What A has done has been to change the industry of one man from that of shoemaking to that of making clothes.

We have already shown how and under what conditions this change can be brought about. We call to mind that there is no necessity that any individual tailor should change his occu-

pation for that of a shoemaker. Some third person may have adopted the trade of shoemaker, and the tailor may take his place, or there may be a series of changes, as already explained in treating of changes of occupation. Finally, some tailor may die and the person who otherwise would have filled his place may learn to make shoes. But in whatever way the change comes about, the final result will be the same as if some one tailor had changed his occupation to that of a shoemaker.

The effect of this change of expenditure is shown in the diagram, which now includes not merely a single flow, as our former diagrams have, but two alternate flows. On the right hand the accented letters represent the flows which formerly went through the tailors. From the agent A went the flow a' to the tailors, among whom of course we include the merchants who sold the clothes. This flow subdivides itself into two, b' and c', the former being the payment for the subsistence of the tailors, and the latter that portion of the payment which went to the parties who supplied the cloth and the wool. These parties got the wool from certain sheep-raisers, and the flow d' represents the payment to them.

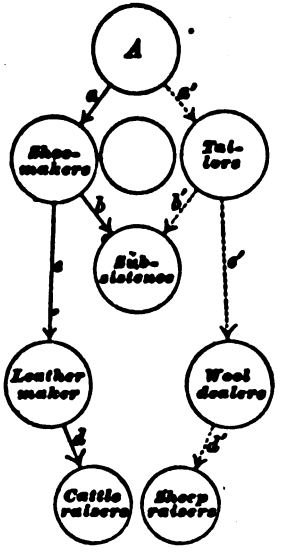


FIG. 7.

Now when A ceases to buy these particular clothes, the latter flows all stop. In lieu of a' we have an equal flow a going to the shoemakers. We therefore suppose a passage of certain men from the ranks of the tailors to those of the shoemakers. To show that this passage may be indirect, we draw a blank circle between them, which may be considered as representing the community at large, or that portion of the community which is looking for something to do. The unemployed

tailors pass into that class, and the shoemakers pass out of it, so that it remains unchanged in number.

Since shoemakers consume the same subsistence as tailors, the flow b for that subsistence is the same as the flow b', so that the interests of society at large are unaffected. In lieu of the flow c' to the cloth and wool-dealers, we have a flow c to the leather-makers. Therefore there must be a change from the business of dealing in wool to that of making or dealing in leather.

In lieu of the flow d' to the sheep-raisers, we have the flow d to the cattle-raisers. It is as easy to raise cattle as sheep, and the balance is made good by a sufficient number of cattle being substituted for sheep.

The point mainly to be kept in mind is that the totality of demand is unchanged by the change of expenditure. There is a greater demand for those classes of services or commodities on the left side of the diagram, and a less demand for those on the right side. The compensation is effected by the passage of a limited number of men from those on the right to those on the left, and the interests of society at large remain unchanged.

35. *Case of Non-competing Groups.* The question may arise, What would be the effect if the change of expenditure by A, instead of being directed to commodities made by the same classes of men as before, should be directed to those made by a non-competing group whose ranks tailors could not join? Suppose, for example, that in lieu of shoemakers the parties employed were professors of Sanscrit and Hebrew. Not only could the tailors never learn to teach Sanscrit or Hebrew, but it is not likely that there could be any relation by which the tailor should take any place occupied by such a teacher in the blank circle. The result would be a general falling off in the demand for the work of tailors, and an increase in the demand for professors of Sanscrit.

It may appear that since the professors of Sanscrit must be clothed, there will be a flow from them to the tailors to compensate for the loss of the flow from A. But examination will

show us that such is not the case. The professors of Sanscrit must have been clad before, and will need few or no more clothes after their change of employment than they did before. Moreover, their entire income is, by hypothesis, taken out of the flow which formerly went to the tailors, and under any circumstances they spend but a small fraction of that income for clothes. There is therefore an actual increase in the demand for the labor of teaching Sanscrit, and a diminished demand for that of making clothes, which, so far as this particular operation is concerned, cannot be compensated.

To learn the complete effect of the change upon society we ought to know what the professors were doing before A employed them. They probably left some other employer, E, and thus the flow to them from E was stopped, to be replaced by the flow from A. If, after the change, this flow from E should pass to tailors, shoemakers, etc., the compensation would be complete, the only change being that the professors of Sanscrit would now be paid out of a new flow. But this would be really no change at all, so far as the interests of classes are concerned, but only an interchange of two flows. What we are considering, however, is not a change of this sort, but an actual change by A from demanding clothes to demanding the teaching of Sanscrit, uncompensated by any reverse change by other people. The undoubted result is that already set forth. So far as immediate income is concerned, one class is better and another worse off. There are indeed ulterior effects, but these are to be considered in subsequent chapters.

36. *Other Forms of Expenditure.* We have been comparing the effects of different modes of expenditure, and we have shown that the sum total of the demand for labor is the same whether one spends his money for one kind of labor or sustenance or another kind. But there are still two cases to be considered. What will the effect be—

1. When A, instead of spending his money by demanding

services from the social organism to which he belongs, sends it abroad, or melts it into jewelry; that is, when he simply stops the flow *a* from himself, and so employs nobody in place of the tailors?

2. When, instead of spending, he invests it in some form of capital?

The modifications in our conclusions when the act of demand is thus modified will form the subject of the next three chapters.

EXERCISES.

1. Draw diagrams showing the effects of the following changes of expenditure, and the corresponding changes of labor. Show also, in each case, whether the change can be made without disadvantage.

I. A man who has been collecting a library stops buying books and spends the same income in building houses.

II. The inhabitants of a city who have been getting their streets graded and paved stop that expenditure and spend the same income upon the erection of a city hall.

III. A body of men who have been clothing themselves expensively stop buying new clothes and expend the money thus saved in giving dinners to their friends.

IV. A body of men in New York stop building railways and invest the income thus saved in building iron ships.

V. A man who has been spending his income in keeping an expensive house bequeaths his property to a college.

2. After the burning of Chicago what classes of men probably left the city, and what classes went thither to find profitable employment?

3. If the government of New York State had never undertaken the building of the new capitol at Albany, in what way would the demand for labor have been different from what it is?

4. When a government borrows money from a body of capitalists who have been building railways, and expends it in war, what change in the occupation of men does it bring about?

5. When the State of Virginia borrowed money from citizens of New York, and spent it in internal improvements, what change in occupation and what movement of population was brought about?

CHAPTER VII.

EFFECT OF A DIMINUTION IN THE FLOW OF THE CURRENCY.

37. Our answer to the question what will happen in case of a withdrawal of currency from the regular flow, and a consequent diminution of that flow, depends upon principles which have already been developed in the preceding chapters. But it will conduce to clearness to combine these principles in a new form and apply the result to this special question. The immediate effect is very obvious, and is correctly apprehended by the business public. The ulterior effect is not so obvious, but is capable of being made clear to any mind capable of grasping the problem.

The immediate effect of the withdrawal must be a diminution of the industrial as well as of the monetary flow. Let us once more revert to the hypothesis of Fig. 7. The consumers A were there supposed to have been spending their money for clothes, thus causing an industrial flow along the lines d', c', b', and a' from sheep-raisers and wool-dealers, etc., through tailors terminating in the men A. It was shown in the last chapter how the change of A's expenditure from clothes to shoes now causes the industrial flow to pass along the veins d, c, b, a, but without causing any diminution in the demand for employment. Now it is very evident that if A does not spend his money in either of these directions, nor in any third direction which will cause a demand for the products of the community, that particular branch of the industrial flow shown on the diagram will entirely stop. This will be the case if he sends his money abroad, melts it into jewelry, or deposits it in a bank which does not loan it out to its customers. Hence the tailors, shoemakers, and producers of subsistence in general

naturally oppose this policy on the part of A, and desire that he shall not only spend his money, but spend it at home.

Now if the money prices of all commodities or services were fixed by any law whatever, whether a legislative enactment or a provision of nature, then this diminution of the industrial flow would be not only the immediate but the permanent result of every diminution in the flow of the currency. But such is not the case. The ulterior effect is that the industrial flow is restored as soon as prices can accommodate themselves to the new state of things. To see this we must first remark that there is no law which prescribes how great a monetary flow is required to measure or equal the industrial flow. This depends altogether upon the scale of prices. When in the equation of the industrial flow,

$$K \times P = V \times R,$$

we have a diminution in V, it may at any time be compensated by a corresponding diminution in P, without changing the actual industrial flow K. Moreover, this operation of diminishing P, so as to keep up the equation, is nothing more than that of accommodating prices to demand, as we have already shown.

If then we suppose that the change of expenditure by A was equivalent to one per centum of the total expenditure of the entire community, it would follow that one per centum of the industrial population would be thrown out of employment so long as the scale of prices remained the same as before. If this one per centum were composed wholly of tailors, that class alone would be immediately affected. Finding this diminution in the demand for their labor, some of them would have to submit to a reduction of one per cent in their wages, while others would seek for other employments. This competition for work would cause a fall in prices, and the reduction in price would cause an increase of demand. Thus, as soon as the equilibrium was restored, everything would go on as before, except in the following points:

1. There would be fewer tailors in proportion to the rest of the community.

2. Wages would be one per cent lower.

3. Goods would be one per cent cheaper.

Thus everything would go on in its regular normal way, only on a scale of prices one per cent lower. No one except A would in reality be either better or worse off. We may assume that A would be a little better off, because he bought, instead of clothing, something which he must have wanted more than he did clothes.

In tracing this effect of the withdrawal of the circulation we have supposed the withdrawal to be permanent. But in most cases the circulation will be restored through the action of causes brought into play by the very act of withdrawal. For example, if a portion of the volume of currency is sent abroad, that very act, if it diminishes home and raises foreign prices, will lead to a demand for our goods from abroad, and thus result in sending back the money. The more money the owner deposits in a bank the more the bank will have to loan. Hence the general rule will be that the volume of currency cannot be so diminished by bank deposits as to cause a great rise of prices. When prices begin to fall, that very fact will cause men to seek for money in order to buy, and thus will arise a tendency on the part of the owners of bullion to get it coined into money, and on the part of business men to borrow from their banks.

38. The question may arise whether, after all, we are not here dealing with a general and serious evil in that we are supposing a change of occupation on the part of men and a change in prices of goods, neither of which can take place without loss and friction. This would be true if there were any system on which we could accurately adjust prices and demand, so that everybody should know exactly what occupation to engage in, and pursue that occupation all his life, and if the change consisted in a disturbance of this adjustment. But such is not the case. As a matter of fact, changes of the kind we have sup-

posed are going on all the time as an inevitable result of the continual change in population and tastes, of old men dying off and new ones coming on the stage, of new modes of production being discovered and new wants arising. Laborers of all classes are continually making changes by demanding higher wages or better terms of labor from their employers, and every change of this sort is necessarily accompanied by change of demand. Prices of every sort are therefore always varying so as to accommodate themselves to these changing circumstances. It is perfectly conceivable that the change made by A in his mode of expenditure would be compensated by a change in the opposite direction by some one else, or by tailors getting dissatisfied and going into other employments of their own accord before A changed his demand. In this case A's change, instead of resulting in the necessity of a new adjustment of prices and wages, might obviate the necessity of an adjustment due to some other cause.

Moreover, we have supposed A's cessation of demand to be for clothing alone, and thus thrown the whole burden of the change on the tailors. But this is an extreme case. The chances are that the demand falls off equally from nearly all classes of products, and that the compensation is effected without any material change of occupation.

39. The above conclusion is subject to one important temporary exception. Although the wholesale prices of commodities rapidly adjust themselves to variations in the monetary flow, there are certain classes of services in which the adjustment takes place very slowly and is impeded by various causes. The salaries of government officers can be changed only by legislation, and therefore do not respond to changes of demand. The salaries of employés generally are to a certain extent subject to the same rule. They are fixed by agreement or custom, and can be changed only after the pressure has become so serious as to derange the business of employers. The same thing is true of most retail prices. It has been shown in a preceding chapter

why they do not respond rapidly to changes in the market. No one expects the prices of dishes on Delmonico's table to rise and fall with the market prices of cattle and flour. Although it is undoubtedly true that in the long-run a permanent change would produce its effect, even at Delmonico's, unless some other cause intervened to prevent it, yet this would not be true immediately.

This resistance to change modifies in an important degree the effect which we have described, and renders it much more injurious to certain classes. What we have conclusively shown is, firstly, that in the case of a diminution in the monetary flow this diminution tends to divide itself in equal proportions in all the channels of flow; secondly, that there is also a tendency to cause a uniform fall of prices; and thirdly, that when these tendencies have full play, no one except debtors and creditors are either worse or better off.

But suppose that there are certain channels in which the sellers of services or commodities are able to demand the same price as before; that is, to keep up the same monetary flow as before through the channels which lead to themselves. The inevitable result will be that the flow into other channels will be diminished in an undue proportion, and that other persons must in consequence suffer. To fix the ideas, let us suppose that the persons who can thus command a constant flow to themselves form one half of the community, and that there is a diminution in the total flow of 10 per cent. Let us call A the half of the community who possess this ability to keep up the flow, and B the other half. The result will be that class A will command the same prices for all their goods and services as before, while class B will find a diminution of 20 per cent in the flow to them. Then class A will actually gain, by being able to purchase more cheaply all the goods which class B have to furnish, while class B will lose to the same extent. In the present state of human nature, class B are not going to submit immediately to this discrimination against them; they therefore determine that they will remain idle

rather than submit to selling their goods or services at so low a rate. The result will be that their prices as well as those of class A will be kept up, and thus there will be a diminished industrial flow from them corresponding to the diminished monetary flow to them. In short, to take the case just supposed, 20 per cent of them will be idle, or perhaps all of them will be idle 20 per cent of their time. Supposing the former case to occur, as it commonly will, the result will be that the 80 per cent of class B who remain at work will be in the same position as class A. Thus we shall have 90 per cent of the population at work on the old scale of prices, and 10 per cent idle, and looking for a living as best they can get it.

Such is the familiar case presented to us in what are commonly known as "hard times." The real trouble in such cases is that wages and prices are higher than they should be to correspond to the monetary flow. Were there any power which could by its own fiat diminish all prices ten per cent, that act would operate exactly like taking the load off a wheel when the driving force became insufficient to turn it. The wheel would immediately commence turning again.

In order that such a fiat should be effective it would have to include not only a scaling down of prices and wages, but of debts. The payment of a debt is an integral portion of the monetary flow; but it is a portion which cannot be diminished in response to a general diminution in the flow, except through the disaster of bankruptcy on the part of the debtor. The result is that when the general flow of currency diminishes, the intensity of its effect is exaggerated, not only because there are such large classes of men who cannot command the same prices as before, but because in every mercantile community large payments of debts are always due. This is why a commercial panic is first felt at the monetary centres, where business is conducted and debts are incurred on a large scale, and why in case of such a panic the obstruction to current business is proportionally greater than the diminution of the total monetary flow.

40. Since there is no power which can possibly issue or enforce such a fiat, or make any regulations respecting prices, it follows that the only available way of avoiding the evils just described would be to make the monetary flow correspond to the variations of price. Were this practicable, the method of doing it would belong to a separate portion of the present work, since it would be a practical application of economical principles, and not a branch of the science. But we may dispose of the subject by showing what kind of difficulties surround it. What we want is an accordance between the two quantities, *scale of prices* and *flow of currency*. Now suppose that the government or banks of the country could, by the issue of credits or paper money, make the flow of currency what it pleased. If prices were fixed by law, there would then be no difficulty in keeping up the equation. But, as a matter of fact, every man is at liberty to set what price he pleases on his goods and services. It would therefore be impossible for the government to keep up the equality. The result of an attempt to do so would be a continuous increase in the volume of the currency to correspond to the continually increasing prices which everybody would be putting upon their contributions to the industrial flow.

In this connection it must be remarked that we have in all the preceding discussions supposed the disturbance to begin with a diminution of the monetary flow. But the student of the subject should never forget that the real evil is not merely this diminution of the flow, but the lack of correspondence between the flow and the scale of prices which thus arises. The very same trouble will arise if prices are made higher while the flow remains unaltered. Now, efforts to increase prices or wages are constantly being made on every hand, and no power can prevent them. Let us suppose all the operations of industry to be going on in the normal way already described, everybody being employed on terms which are satisfactory for the time being. As human nature is, we may be sure that this satisfaction will not continue. Some class of men,

the builders of houses for example, will be sure to demand higher wages. Let us suppose that they command them; the result will be an increase in the flow of the currency to the builders of houses which must come out of the pockets of their employers. Hence there will be a less flow from these employers to other people. The success of the house-builders will encourage other classes of laborers to demand higher wages. This demand will come at the very moment when, in consequence of the success of the house-builders, there will be an inability on the part of the public to pay even the same wages as before. The probable result will be a more or less prolonged strike, which, even if it succeeds, will lead to some classes being left out of employment. That is, we shall have the very same effects as would have resulted from a withdrawal of currency.

CHAPTER VIII.

EFFECT OF LABOR-SAVING IMPROVEMENTS IN PRODUCTION.

41. Every person familiar with industrial operations is aware of the contests which so often arise between artisans and the introducers of labor-saving processes. These contests are being continually waged in one shape or another. The general rule is that whenever a machine is introduced for making what was before made by hand, the workman opposes its introduction by every means in his power. The opposition is based on the very obvious ground that if the introduction of the machine is permitted, it will deprive a part or the whole of the workmen of their employment. For example, the number of boots and shoes which the people of a country wear will not be greatly increased by a reduction in their price. Consequently, if a machine is introduced which, under the guidance of one man, will do the work of twenty shoemakers, a falling off in the demand for the labor of shoemakers is inevitable.

The history of this subject shows one feature which does not receive the attention it deserves. In this contest between the artisan and the machine, the latter has been continually victorious for a hundred years. Class after class of men have seen a large part of their employment taken from them by machinery, so that at the present time there is scarcely any demand for the labor which millions of men had to perform a century ago. And yet, in spite of this, the laborer gets higher wages than he did a century ago, and is as fully employed as he ever was. His victor, instead of crushing him, has benefited him. In the whole history of the contest we do not find a case of a general and permanent fall of wages from the introduction of machinery.

The principles laid down in the preceding chapters enable us readily to account for this. Let us take for example the hypothetical case of a shoe-machine. Suppose a machine to be so perfect that it really makes shoes of every kind and quality for almost nothing, so that after its introduction there is absolutely no demand for the labor of the shoemaker. To fix the ideas, let us suppose that the average flow from the rest of the community to the shoemakers is $5 from each person. Let us also suppose, to make the case as extreme as possible, that the cost of the machine-work is practically nothing, so that every man's shoes on the average cost him $5 less per year. What is the consequence? An obvious consequence is that there is no longer any demand for the labor of shoemakers. A consequence less obvious is that every man has $5 more to expend in some other direction. As already shown, he can only expend this $5 by directly or indirectly demanding that amount of labor or its products. Hence arises an increase in the demand for other kinds of labor exactly equal to the diminution in the demand for shoemakers. The equilibrium is completely restored by the class of men who are engaged in making shoes employing themselves in the kind of labor for which there is an increased demand. When this change is completed every one will be as fully employed as before, and every one will enjoy the advantage of cheaper shoes.

We may readily apply the principle here illustrated to the actual historical facts. The introduction of machinery during the last hundred years has to a certain extent changed the direction of men's occupations. Instead of making things with their own hands, as they formerly had to do, they are now managing machines or assisting in various ways in working them. The pin-makers are no longer at work; a few of them are feeding a pin-making machine, but the majority have learned other employments. A large class of carpenters no longer push the plane; a portion of them feed the planing-machine, and the remainder are fully occupied in executing work with that increased refinement which increased demand has encouraged.

The same change may be traced all through the channels of industry. The general rule which we may lay down is this:

No operation of cheapening production can cause a diminution in the sum total of the demand for labor. Every diminution which it may cause in one direction is compensated by an increased demand in some other direction.

42. *Effect of Improvements in Production upon Different Classes.* In the preceding discussion we have been principally concerned with sums total as affecting the prosperity of men in general, but we have not considered the effects of improvements in production upon special classes. Our general conclusion has been that, taking society at large, there has been a general improvement in the ability of men to command the necessaries and luxuries of life with a given amount of labor. We have also shown that the demand for labor in general cannot be said to vary from generation to generation, because it adapts itself to the varying conditions which come into play from time to time. When the flow of currency increases, the demand for labor increases. Higher wages then can and will be commanded; but with these higher wages come higher prices, so that if the conditions of production are unchanged, the power on the part of the laborer to command the necessaries of life is unchanged. When we measure demand, not by money, but by commodities, then improvements in production give rise to increased demand, which is met by wages becoming higher when measured by the necessaries of life, though they may not be higher in money.

Thus each class of men is affected by changes in production in two ways—(1) by changes in its money wages, and (2) by changes in the price of the sustenance which it consumes.

The question which now arises is this: From the fact that the demand by the community at large for labor in general remains unaltered through all variations in production, does it follow that the benefit of these improvements extends to all classes? Does it follow that the shoemakers just spoken of

can do what the savers of money want done? We reply that it does not so follow by virtue of any general or necessary principle. To get the advantage of improvements in production the laborer may have to accommodate himself to new conditions, and if he cannot do this he may be as badly off as before, if not worse. The question whether he can so accommodate himself is one of mere fact to be settled, not by deductive reasoning, but by an appeal to the history of economic phenomena, and by an examination of the ways in which the laborer must accommodate himself to the new conditions. What we can say with certainty is that, the total demand for labor being unaltered, it follows that if there is a less demand for one kind of labor, there will be a greater demand for some other kind, and *vice versa*. Hence, if the laborers of any one class do not reap any benefit, there is so much the greater benefit to be reaped by those of some other class. This brings us to the main question; that is, the power of laborers to pass from one kind of work to another. To consider this question intelligently the reader must have clearly in mind the conditions of this transfer of labor between competing and non-competing groups, as already developed (II. 50).

43. Let us begin with the case of shoemakers. Suppose that by means of machinery the amount of labor necessary to the production of a pair of boots or shoes is suddenly reduced to one half. If the community wear no more shoes than before, then one half of the shoemakers must find some new employment. We have already shown that in such a case people who wear boots and shoes will have the amount of money saved by the improvement to spend for other commodities; and if the shoemakers who are thrown out of employment can make these commodities, then they will command the same wages as before, and will, in common with the rest of the community, reap the advantage of having cheaper shoes. But if they can do absolutely nothing but make shoes, they would be compelled to suffer distress.

To see whether any such state of things is probable, we recall that the supposition we have made, namely, a sudden reduction of one half in the cost of making shoes, is an extreme one. As a general rule the improvement is gradual, and the transfer of labor from shoemaking to other branches is brought about, not by men changing their employment under compulsion, but by people who under the old system would have learned to make shoes learning to do something else on the new system. The distress therefore could arise in the way we have pointed out only by a class of men being born who could never learn to do anything but make shoes. As a matter of fact no such men are ever born. There are a large number of mechanical trades requiring the same order of natural skill as making shoes, which men who would otherwise become shoemakers can readily learn.

The question then takes the form whether the members of the community would spend the money saved in their shoes in the demand for products requiring the same skill as shoemaking. Let us for clearness suppose the community divided into three classes, unskilled laborers, skilled laborers, and intellectual laborers. Let us also suppose that every man who is born can find a place in one of these classes, and in only one. We also suppose that in each class he can learn to follow any pursuit which he may select. Then if the community spends the money saved on shoes in demanding products of unskilled labor, the class of unskilled laborers will be the people most benefited, because they will have higher wages and cheaper shoes at the same time. The class of skilled laborers would gain by having cheaper shoes, but lose by having lower wages. We cannot say whether the advantage or disdvantage would be the greater in this case. The demand for intellectual labor would not be altered; but the educated class also would gain by having cheaper shoes. The general result would be that unskilled labor would gain doubly; intellectual labor would gain singly; skilled labor might either gain or lose. The average result to the community at large would be a gain equal to the saving on shoes.

If the money saved on shoes was expended in the products of other skilled labor of the same order as shoemaking, then the balance would be completely preserved, and all classes would command the same wages as before, but would gain by having cheaper shoes. Finally, if the increased demand was in the direction of intellectual labor, the result would be of the same general nature as when the demand was for unskilled labor. Intellectual laborers would gain doubly by having higher wages and getting cheaper shoes; unskilled laborers would gain singly by having cheaper shoes with the same wages; while the class of skilled laborers would gain in one direction and lose in another.

44. The question whether all classes are equally benefited therefore turns upon whether, when machinery, knowledge, and methods of production are improved, the general order of skill required in production is increased or diminished. This, I say, is the form which the historical question takes. It is one to be answered by a comprehensive examination of the requirements of modern machinery and labor. The result would probably be that a lower order of some qualities and a higher order of others is required. It is probable that less natural skill of a rare kind is required when goods are made by machinery. So far as this is true, the introduction of machinery is doubly beneficial to the day-laborer by securing him a higher order of employment and cheaper necessaries of life at the same time. It is also true that the management of the machine may require moral characteristics—industry, sobriety, steadiness, honesty, and reliability—of a higher degree than ordinary irresponsible labor. If so, the laborer who does not possess these qualities would again be at a relative disadvantage in consequence of improvements in production. That is to say, he would lose by lower wages and gain by cheaper products, and the loss might exceed the gain. We may lay it down as a general rule that the idle, dissipated, and unreliable classes will be in about the same low state, no matter how

far society advances. Even philanthropists could do nothing for them, unless it could do away with them in the future by preventing them from being born; and perhaps there is no effective way of doing this unless by extermination.

45. There is yet another way of looking at the subject which will lead us to similar general conclusions. The way in which improvements really benefit society is by increasing the quantity and quality of the commodities necessary to existence, health, comfort, and happiness. But when we consider the relations of special classes of men we find that different classes consume different commodities. Improvement in the production of silk dresses, linen shirts, white neckties, gold watches, and fine houses are of no benefit to the class of unskilled laborers, who cannot command or do not want any of these commodities, even when they are cheapest. What is necessary to the amelioration of this class is improvement in the production of corn, pork, coarse cloth, flannel, and cheap houses. We may then inquire whether the production of this last class of commodities has improved as much as that of the other and higher classes. If so, then all classes will be benefited in the same proportion. If the improvement in producing the necessaries of life exceeds that in producing the luxuries, the laboring classes will have been the greatest gainers. In the contrary case the higher classes will have been the gainers. This, again, leads us to considerations of fact which the reader can advantageously enter upon for himself.

There is, however, one defect in his conclusions to be guarded against. If we inquire into the effect of improvements in production upon human progress, we should make a great mistake if we did nothing more than compare class with class in the way we have followed in the preceding examples. One of the great fallacies which pervade popular economic reasoning arises from failing to distinguish between small classes and large ones. We hold up for public sympathy a few individual sufferers whom we suppose to have suffered in consequence

of the advance of society, and we ask society at large to stop its progress for the benefit of the unfortunate class supposed to be represented by these sufferers, without calculating the number of this class. We must admit that, as men are constituted, they will be moved more strongly to action by individual cases which chance to be presented to them than by considerations of the good of a large class which they do not see. They forget, or will not comprehend, that the interests of millions are more important than the interests of thousands represented by some particular petitioner or sufferer whose case has excited their sympathies. This leads us to see that in considering the subject from a philanthropic point of view, the beneficent effect of improvements in production consists in this, that whole classes of men are enabled to enjoy more of the luxuries of life. Fifty years ago the majority of the inhabitants of this country slept on straw beds; now every inhabitant who wants to can command as good a bed as the richest man in the country, so far as its substantial qualities are concerned. We now see in the cottages of every class of laborers little comforts which fifty years ago could be commanded only by the wealthy. In a word, the number of those who can enjoy the substantial comforts of life is continually increasing through improvements in production, no matter what doubt may be entertained as to the status of the lowest classes of humanity.

It appears that the general effect of the improvements in question is to leave the two extreme classes, the wealthy and the worthless, comparatively unchanged. The former can command all they want whether improvements go on or not. They do indeed gain by the discovery of new means of enjoyment, but this is not a merely economic effect, being due to improvements in knowledge, taste, and morals. The worthless class will always be what it is now, no matter what society tries to do for it. But all classes between these extremes are constantly advancing, and the luxuries of life are becoming accessible to a continually increasing proportion of the population.

CHAPTER IX.

THE FUNCTIONS OF THE CAPITALIST.

46. There remains to be considered the effect of investing money in the increase of capital. In the popular mind, one who invests his money is supposed not to expend it. Hence it might be supposed that the effect of the investment of money would be that described in Chapter VII., through the money being withdrawn from circulation. But we now know this opinion to be erroneous. Investing money consists in transferring its ownership to some other person, and receiving in return a right of property in capital of some kind. This will be already clear to the student who has carefully studied the chapter on capital in the second book. The person investing is simply a purchaser of bonds, stocks, or material capital; and if he buys bonds or stocks, he becomes the owner of certain rights in some form of material capital.

Although there may be many transfers of the money thus invested before it finally reaches the hands of laborers, yet it will as a rule ultimately reach them. Suppose, for example, that a person A loans a sum of money ϖ to a friend. Then the friend has ϖ dollars more and A has ϖ dollars less than before, so that the sum total of their power to employ labor remains unchanged. Let the friend purchase bonds from a banker with the money. Then the power of employing ϖ dollars' worth of labor passes to the banker. The money serves the banker no useful purpose until he passes it to some one else, perhaps a customer. Every one into whose hands it falls must be paying or losing interest on it while he keeps it, and he cannot gain the interest until he purchases an ownership in some form of actual capital.

As a general rule it will not pass through many hands until

it is employed in hiring laborers to build a house or factory, or to do some other kind of work necessary to the increase of capital. Hence, so far as the employment of labor is concerned, expenditure by investment gives the same kind of employment as any other kind of expenditure, and thus forms no exception to the rule laid down. But if we consider the ulterior effects of this mode of expenditure as compared with that of purchasing commodities for one's own consumption, we shall find that, although the immediate effect is the same, the ultimate effect upon the prosperity of society is very different. The effects may in fact be divided into primary and secondary. The primary effect is that already pointed out in showing that the expenditure does not increase or diminish the sum total of the demand for labor, but only determines into which one of a great number of possible directions the labor shall be directed. The secondary effect is to increase and cheapen the production of sustenance, and thus to diminish its cost to the community and to laborers in general. This secondary effect is produced in so indirect a manner that we must view the process through which it arises from different points of view.

47. We begin with an example of a special case which will illustrate the theory. Let us suppose that a person, by living in the most economical manner possible, could save $3000 per annum out of his income. He then has his choice of two modes of proceeding:

Firstly, not desiring to live so frugally, he spends his whole income in sustenance for himself. That is instead of living frugally, he demands fine furniture and carpets for his house, books for his library, pictures, jewelry, extra fine clothing, horses and carriages for himself, to the total amount of $3000 per annum.

Secondly, he may abstain from the enjoyment of these luxuries and expend the income thus saved in building houses for rent.

In changing from the former mode of expenditure to the

latter he will, as already shown, be diverting a certain amount of the producing power of the country from the work of producing furniture, books, clothing, horses and carriages for him to the work of building houses for him. So far the account is balanced, and the change is neither better nor worse for society at large. It is the same if, after each house is built, he occupies it with his own family, or uses it in any way for his own exclusive benefit. The only change is that society is supplying him with houses for his own use instead of supplying him with the luxuries already described.

But suppose that after each house is built he regards it as an investment of capital and offers it for rent. Then the conditions are altered. Society at large, or the particular class of society which can afford to live in the kind of a house he has built, will have a larger supply of houses at its disposal. The tenants will each be in the enjoyment of a house which they could not afford to build. Leaving out of account the rent they pay, the state of things is the same as if the saver had voluntarily abstained from luxuries in order that these tenants might have houses.

Since, however, the tenants pay rent at the highest market rate, the question may arise whether this rent is not in every way an equivalent for the benefit rendered by the house, so that after all society at large is no better off on account of the second mode of expenditure. The reply should be in the negative. Society is better off because of the additional supply of houses and the consequent lowering of rents. Although the market value of the services rendered and received balance each other, yet the total utilities do not balance. Each tenant enjoys a complete house without having had to save anything to build it. Could they have had no house until they had built them themselves, they would have been obliged to go for several years almost without shelter.

Suppose that the man, being of a penurious disposition, expends all the rent he receives from his house in building still more houses. It is clear that so long as that process con-

tinues the advantage to the tenants continually increases. They all have to pay rent, but that rent is expended in building new houses for more tenants; and so long as the owner himself abstains from any enjoyment of the income, so long do tenants get the entire benefit both of the houses and of the rents.

Let us inquire more closely into the exact nature of the benefit which this investor in houses has conferred. It is plain that, whatever the number of houses he has built by his saving, that additional number have the tenants of the country to live in. The supply being thus enlarged, it is to be expected that the rents will be lower in about the same proportion, so that the entire body of tenants get more houses for the same sum total of rent. That is, the competition of landlords lowers rents just as an increased supply of a commodity lowers its price.

But there is one essential difference between this competition and that in the manufacture and sale of commodities. In the latter case there is a certain net cost of production below which no amount of competition can permanently depress the price. But what the tenant pays rent for is only the *use* of the house, not its ownership, and the owner makes this use available to him through abstinence, which does not cost money at all. Now, there is no necessary limit to the possible practice of abstinence, and so no necessary limit to a possible fall of house-rents through the competition of capitalists.

48. To consider the subject in a more general way, let us suppose that nobody saved any money for investment, but that every person in the community expended his entire income in providing for the immediate wants of himself and his family. Then there could be no increase in the capital of the country. For example, no railway can be built unless certain persons feed the laborers who are engaged in building it; and in order to do this it is absolutely necessary that some one should have saved up money or sustenance which he does not want

himself. This would not cause any positive loss in a community which did not increase in population, and which was content to remain stationary in its consumption of commodities. That is to say, if all the railways, farms, factories, fences, and other forms of capital, and the whole supply of raw material employed in production, are kept up to their present standard, while population remains the same, the wants of the stationary population will continue to be supplied as well as ever, but no better.

If, however, the owner of a railway should allow the rails to rust out without having saved the funds to replace them, and if the same thing should happen to the other fixed capital of the country, there would be a positive diminution of capital without, apparently, any one ceasing to live on his income. But this would amount to the same thing as expending not only one's current income, but also the capital he had before accumulated. In order to keep up his capital the owner must save enough from his income to make good its wear and tear. If he does this and nothing more, he will still be expending his entire income.

Suppose that under these circumstances population increases. Without any new railways, factories, fences, and farms there can be no increase in the production of commodities; or, at least, the increase will not be proportional to that of the labor which would now be available. The result would be a general scarcity and higher prices. Men would be compelled to seek out new farms; but since, by hypothesis, no one has any money to loan them, they must supply their own wants as best they can while cultivating the farms. Since no new railways are built, the farther they go from the railways the farther they will have to haul their produce to market. Since no more clothing can be made, every one would have to go with a continually diminishing amount of clothes. The result would be scarcity, distress, and perhaps famine, continually increasing from year to year.

Of course the same result would happen yet more rapidly if

the owners of capital not only failed to add to their savings, but suffered the capital which they already possessed to go to decay. After the rails are rusted out no more freight can be drawn over the road; after the machinery is worn out no more goods can be made until it is replaced.

Now, the fact is that a large majority of persons in every community do act in precisely this way. They do not save any part of their income to be invested in capital. In fact, our typical idea of a laborer is that of one who has never saved anything from his earnings, while by a capitalist we mean a man who has saved money from his income and employed it in hiring laborers to improve the capital of the country. A large majority of laborers, even if they were placed in possession of capital, would probably employ it in satisfying their current wants. Hence if there were no capitalists there would be a continual increase of misery, want, and starvation which would go on unceasingly with the increase of population.

49. The same thing may be seen in another light from the communistic point of view (Part II., Chapter IX.). Referring to the conception of a national reservoir of wealth, it is evident that the less sustenance any one draws from this reservoir the more will be left for others. Now, a non-capitalist is a person who withdraws from the reservoir in the form of sustenance everything to which his services entitle him; that is, his whole income. The capitalist is one who does not withdraw all this sustenance. He leaves in the reservoir that portion of his share to which his investment would entitle him, and, instead of taking the sustenance, becomes the owner of capital designed to increase the production of sustenance. Let us call A that part of his income which the capitalist expends for sustenance, and B that part which he invests in capital, say railway stock and machinery.

If he consumed this railway and machinery to supply his own wants, then, so far as the interests of society are concerned, he might as well have taken the portion B in susto-

nance at once. But he cannot consume any considerable part of his railways, machinery, or other form of capital in the supply of his own needs. The palace-car in which a railway president sometimes travels is indeed a product of the capital of the railway consumed as sustenance. But it is a very small fraction of the earnings of the road. The great function of the road is to produce sustenance and bring it to the reservoir for use by the public.

But the reader must guard against a misunderstanding. We have apparently shown that the capitalist not only leaves his share of sustenance for others to consume, but also the whole product of his capital. But this would be a misinterpretation. It is true that if we suppose the sustenance which he declines to take to have been previously brought into the reservoir, this would be true so far as that particular fund of sustenance is concerned. But he cannot get his capital without employing labor to produce it. So he says to the laborer, "Instead of producing sustenance for me to consume, produce capital for me to use in further production." Hence, in the very act of refusing his sustenance, he withdraws a corresponding amount of labor from the production of sustenance and devotes it to the production of railways, mills, or other forms of capital. Less sustenance and more capital is produced. But do not forget that this diminution of sustenance does not come out of the share of others, but is only the capitalist's own share which he has refused to order.

As already shown, he cannot get any use of his capital except by making sustenance with it. Moreover, if his investment is a profitable one, the amount of sustenance thus made must be greater than that which he refused to consume. Since capital is really a labor-saving contrivance, we must expect that this will always be the case except when bad investments are made.

The question may now be asked, Since all this extra sustenance which he receives as profit belongs to him, in what way is society benefited? The reply is this: By hypothesis, it is sustenance which, although he owns, he does not himself want

to consume. If he had wanted to consume it, he would have consumed it in the first place and never purchased his capital at all. Since, then, he necessarily offers this increased supply of sustenance in the public markets for sale, the result is a fall in the price of sustenance generally, arising from a more plentiful supply at the command of the community. Thus we reach the very same result that we did by the former reasoning in the case of houses, the enjoyment of houses being equivalent to the consumption of sustenance.

Let us observe, in illustration of all this, the actual process as we see it going on. A barrel of flour can now be transported from Chicago to New York for about fifty cents. Thus at an insignificant cost the whole population of New York can draw their food from the Western prairies. This would have been impossible unless railways had been built. The railways would never have been built if the Vanderbilts and other wealthy men had not saved up their income and employed it in building railways.

50. A clear understanding of this intricate subject is so important to one desiring a complete command of it that we shall go over it in yet another way. From what has been said in the preceding chapters it will be seen that the monetary flow to a person whom we call an *agent* is divisible into two portions, the one *income*, over the expenditure of which he has complete command, and the other *business expenses*, over which although formally he may have equal command, yet, practically, which he is obliged to expend in the ways determined by the condition of his business. With this latter portion we have at present nothing to do, being concerned only with his expenditure of income.

In relation to his income we may regard him either as producer or consumer. As a producer his income is the money value of his contributions to the wants of others. These contributions may be in the form either of capital or of sustenance, but they are determined immediately by the demands of

others for his products, coupled, of course, with his own talents. In other words, if he made shoes rather than clothes, it was not because he thought shoes a better thing to make than clothes, but because he found, or thought he would find, people wanting shoes rather than clothes. In whatever branch of business activity he engaged, we may assume that he chose it on account of the wishes of others rather than of himself. Hence he is not to be considered responsible for the direction of his producing activities.

But when we consider him as a consumer of commodities or expender of income the case is reversed. He holds in his hands the power of directing an amount of industry represented by his income. He thus becomes a power determining what he shall demand from society; and the question which arises is whether society has any more interest in his demanding one thing than another (cf. Chapter VI.).

From what has been said it will be seen that there are two ways of making this demand. The agent may either purchase something already made, or he may hire laborers to make it. But it has already been shown that these two methods lead substantially to the same result. It is true that in the first case he does not immediately direct any industry at all, since all he does is to purchase from some seller, X, a commodity, C, already made. But in the very act of paying for C he places in X's hands both the power and the disposition to reproduce C in the future by re-employing labor if necessary. Hence, whether he purchases C or employs a laborer to make C, he directs a certain amount of labor to that production in the very act of expending his income.

The only question which we have left is whether the commodity C which the agent demands is *sustenance* for himself or *capital*. The capital may be sustenance for sale to some one else. If he demands sustenance for himself, then his account with society is balanced; he simply consumes the equivalent of his income, that is, of his contributions to the sustenance or capital of others. But if he demands any form of

fixed capital, then, until that capital produces something for some one else to enjoy, society at large is in exactly the same condition as if he had demanded sustenance for himself. The changed condition of things arises when that capital begins to produce sustenance which is offered for sale. If we suppose the agent's demand for capital to have included everything necessary to make the capital effective, which of course we must do, then it would have comprised not only fixed capital, but raw material to be manufactured, and sustenance for the laborers employed in the manufacture. To make the matter clear, we may divide his investment into three parts:

F, that part expended in fixed capital;

C, that part expended in raw material for manufacture;

W, that part expended in the payment of wages.

Each of these items represents a fund of labor which he could have required to be devoted to sustenance for himself.

The portion W represents that portion of the fund of sustenance which he owns and commands, but the right to which he delivers over to the laborers in exchange for other work. Thus the laborers enjoy a certain amount W of sustenance which would otherwise have been consumed by the agent.

The machinery now goes to work; the raw material is manufactured into some finished product, sustenance or capital, and the result is that an increased product is for sale to society, thus resulting in competition and a reduction of prices.

51. Let us now consider whether the laborer, that is, the non-capitalist, really has, through the saving of the capitalist, an opportunity to consume a greater value than he produces. Taking the case just as it stands, our answer must be in the negative. Suppose the capitalist to have allowed the tenant to live in his house for a whole year free of rent, except such amount as might be necessary to keep the house in its original condition. Then when the tenant restored the house to the owner at the end of the year, it would be in the same condi-

tion as when he took it. He would therefore have consumed nothing more than he reproduced by keeping up the repairs. Hence whatever portion of the rent he pays as interest on the capital invested is over and above his actual consumption of the house. It might therefore seem that he gets no equivalent for that portion of the rent which he pays for interest on capital.

This is the same stumbling-block that we have already described in the chapter on the rate of interest (Book II., § 72). It is very evident that the capitalist has given him during the whole year the use and shelter of a house which would never have existed but for the capitalist's savings. Now, it is this use which measures the benefit conferred, and not the consumption of the house. Perhaps in thirty years the tenant could have saved money enough to build the house himself, but he must have the house *now*; and the benefit rendered consists in the capitalist letting him have now what, by his own exertions, he would not have had for thirty years. But it still follows that he must, at the end of his tenancy, return the house in as good order as when he got it, besides paying interest on the capital invested in it.

Returning, then, to our original question, we find it to be really true that the capitalist does not allow the laborer to consume more than he produces. But we must remember that he produces more than he would have produced without capital. Capital, skill, and organization are the great labor-saving agents. The more they improve the more productive labor becomes. Now, the laws of supply and demand permit the laborer to command his full share of this improvement although it was effected by the mental powers of a much higher class of men.

EXERCISES.

1. When Mr. George Peabody made his great gift for the benefit of the London poor, he directed that it should be expended in building houses for them and renting these houses to them at a moderate rental. The income thus gained was to be continually expended in building additional houses for other poor.

I. By this arrangement did the benefactor confer as great a benefit upon the poor as if he had directed that the houses should be occupied free of rent?

II. In what respect did his action differ in its effect from that of a miserly capitalist who invested his whole surplus income?

2. Explain the function of capital and the reason for interest from the point of view taken in III. 78, and show that great numbers of people are now in the enjoyment of the past labor of other people.

3. From the same point of view, show by examples drawn from industrial works that the man who would make improvements in future production on a large scale is obliged to help others in order that he may attain that end.

4. Of two young men, the one spent all his income in expensive clothing and in giving entertainments to his friends, in order to encourage trade, while the other invested his income in railway bonds. Compare the economic effects.

5. Give examples additional to those in the text of the effect upon society of a general decay of the desire to accumulate wealth on the part of capitalists. If none of the next generation of men should try to get more than one hundred dollars ahead of their current expenditure, what would be the result?

6. Is it better for the typical laborer who is never going to save anything that the capital of the country should be mostly concentrated in the hands of a few persons, each possessing an immense fortune, or that it should be divided with an approach to equality among a great number of small capitalists? Consider especially the case of the New York Central and other great railways of the country. [We here suppose society divided into two classes, a laboring class L, and a capitalist class C, owning a definite quantity P of capital. We want to know whether it is better for L that the capital P should be distributed equally among C or concentrated in a few hands.]

CHAPTER X.

THE RELATION OF CAPITAL TO LABOR.

52. As society is constituted, employment can be given to labor only by and through the instrumentality of capital. That is to say, no person can employ labor unless he has money saved up which he does not want for his own immediate use, with which to pay the laborers their wages. These wages would be of no use to the laborer unless there were sustenance in the market for him to buy with his wages. This sustenance must be such as the owner does not want for his own immediate support, else he could not afford to sell it. It is sustenance, as already shown several times, which constitutes the only real wages, and in paying the laborer money the employer only supplies him with the means of obtaining the sustenance. We might therefore simplify the problem by considering the employer as the owner of the sustenance which he gives the laborer in exchange for his work, were it not for a liability to be misunderstood.

The laborer must also have tools and machinery to work with. Tools and machinery are forms of capital, and must be supplied by a capitalist. If, as may well happen, the laborer owns his own tools, he is himself to that extent a capitalist.

A third form of the capital necessary to the employment of labor is the raw material on which the laborer must perform the act of production. In agriculture the raw material comprises manure and seed. In the cotton-mill it is cotton; in a clothing-factory it is cloth.

Fixed capital in the form of tools and machinery, circulating capital in the form of sustenance, and circulating capital in the form of raw material may therefore be regarded as immediate necessities to the employment of labor. But it does not at all

follow from this that there is any mathematical relation between the value of the capital and the amount of employment it gives to labor. In digging up a street, all the fixed capital necessary to the employment of a digger may be a pick and spade, each worth fifty cents. In a great cotton-factory capital to the value of hundreds of dollars may be necessary for each operative. We must therefore seek for some other mathematical measure of capital than the value of the accumulated fund, if we are to discover a mathematical relation between capital and the labor it can employ. To do this we must refer to the distinction already pointed out between capital as a fund and the flow of capital.

53. Let us inquire what constitutes the funded capital of a cotton-factory. We readily see that the owners of the factory, in establishing it and putting it into successful operation, had to invest their capital in the following way:

Firstly, they had to erect the necessary buildings and place in them the necessary machinery. Secondly, they had to supply themselves with a sufficient quantity of raw material to keep the operatives employed until they begin to receive returns from the sale of the goods. In order that they may incur no danger of the factory having to stop for the want of material, it is necessary always to have a considerable supply on hand. Thirdly, it was necessary to have a sufficient accumulation of money to pay the wages of the operatives until the owners begin to be reimbursed from the sales of the product.

If we take an inventory of the invested capital at any state of its progress, we shall find that, in addition to the forms enumerated, there is a greater or less supply of the finished products on hand waiting to be sold, and a certain amount of debts due from parties to whom sales have been made. It often happens that payment is not expected for three or six months after the delivery of the goods. When this is the case the owners of the factory must have a supply of raw material and finished goods sufficient to keep the factory going during the whole period

that any particular portion of the material is undergoing the process of manufacture, and for three or six months longer. Thus at any time we shall find the capital to consist of buildings, machinery, stores of raw material, material undergoing the process of manufacture, stores of finished products waiting the market, money in bank to pay operatives, and debts due the company. Subtracting from these the debts due from the company, we shall have the value of the fund of capital.

In the average normal case this accumulated fund varies very slowly, although the principal items which make it up may vary greatly, one diminishing while the other increases. The sum total will represent the abstinence of the owners which has given rise to the factory. It is the fund on which they expect to gain a profit to compensate for this abstinence.

But we cannot, merely from the knowledge of how many dollars are thus invested, conclude what number of laborers the factory can give employment to. This depends upon the rate at which the capital is being transformed. We are to consider the capital as in a constant state of flow, material flowing in at one end, passing along through the factory, and flowing out at the other end. A smaller but much slower flow is going on in the fixed capital, the machinery being worn out and constantly needing labor to replace it. As a part of the same process we must consider the flow of wages to the operatives. As already pointed out, this flow may be considered as coming from the owners of the capital. Thus we may count up in all three flows of capital to the factory: the raw material to be transformed, the sustenance for the operatives and managers to consume, and the labor applied to the continual renovation of the buildings and machinery. From the factory we have the one flow of finished products which goes to society at large. The return flow of money, received in exchange for the finished products, branches off in the three directions through which labor and material come to the factory; that is, one flow of the money goes to the operatives, another to the suppliers and repairers of buildings and machinery, and a third to the

producers of raw material. Besides these we have a fourth flow to the owners of the factory. Considering these owners purely as capitalists, this last flow is their compensation for abstaining from the enjoyment of the capital invested in the factory. In so far as they are managers it is their compensation for the skill and labor which they have expended in the management.

54. We now see that the efficiency of the factory as a means of employing labor depends, not upon the amount of the accumulation, but upon that of the flow, especially of the flow to the operatives. In other words, the efficiency depends upon the value per annum which the factory can add to the flow of the raw material passing through it. This, again, is little more than the very obvious and childish-looking proposition that the factory can employ just as many laborers as it can profitably keep at work.

We have now to inquire what is the test that the laborers are profitably at work. The answer is that the value of the product turned out from the factory, considered as sustenance, must exceed the value of the material and labor devoted to the work of production. To take the simplest conceivable case: if a laborer, requiring no capital whatever, consumes one dollar's worth of food per day, and only turns out a product worth fifty cents a day, his labor is unprofitable. Such labor cannot be kept up permanently. If he uses one dollar's worth of raw material daily, then, in order that his work may be profitable when he consumes at the same rate, the product of his day's labor must be worth more than the two dollars expended in production.

Taking the largest view of the case, the profitableness of the factory is measured by its capability of paying dividends to its owners. If no profit is made, then the value of what the factory consumes must be equal to or greater than that of the product turned out, and the establishment must be unprofitable not only to its owners, but to society at large.

55. There are two possible ways of measuring the benefit of such capital as a factory to laborers, namely:

Fallaciously, by the employment it gives to laborers.

Correctly, by the sustenance it produces for laborers.

Measured in the first way, the laborers are considered as consumers, and the sustenance which they consume is supposed to be due to the capital invested in the factory. But it must never be forgotten that this sustenance would never have been available if some one else than the laborers had not saved it, and that it was this saving, and not the existence of the factory, which made it available. We must therefore regard this popular measure of the benefit of the factory as entirely fallacious. We should rather regard it as the measure of what the factory costs society at large, because labor is the producing power of society, and is limited in supply, and the work of the factory may be said to consume a portion of this supply.

The true measure of the value of the factory is not the consuming power of the laborers, but the producing power of their work, or rather, as just shown, the excess of the sustenance produced over that consumed.

The important question now arises: Let the factory produce a form of sustenance which the lower orders of laborers do not want, gold watches for example. Then, since the sustenance consumed is the food and clothing of the operatives, the work of the factory results in a positive diminution of food and clothing. Is its effect, then, not positively injurious to the poorer classes?

We reply, Yes, if we make abstraction of every agency except this particular factory. But, as already shown, the work of all the factories of a country is divided up in proportion to the demand for their several products. We may be sure, therefore, that for every watch-factory at work for the wealthy there will be a corresponding number of other factories producing coarse or fine food and clothing in proportion to the sustenance demanded by the various classes of society.

CHAPTER XI.

LAWS OF A HETEROGENEOUS CURRENCY.

56. In our consideration of monetary operations we have hitherto not taken account of any distinction between the effects of the various kinds of currency which may be in circulation. We have supposed that every dollar which a man received was paid out by him as soon as he could satisfactorily spend it, and that he spent it in the same way whether it was a gold, silver, paper, or credit dollar. But there are certain cases in which these different kinds of dollars will not always be used in the same way, and will therefore not have the same economic effect.

Let us suppose that, in a country using gold only as money, the currency is expanded by the addition of irredeemable paper money. The first effect of this addition to the currency will be a general increase in the demand for goods. This demand will produce an increased activity in trade, to be followed by a general rise in prices. Since this rise of price is confined to the country in question, its citizens will be led to purchase goods abroad, and thus to export gold. It will also lead them to invest more money in watches, jewelry, picture-frames, and other things made of gold. The result will be a diminution in the quantity of gold in circulation. The equilibrium will be reached when the gold eliminated from the circulation is equal to the paper money which has been added. The scale of prices will then be the same as before, and the only effect of the change will be that paper has displaced a certain quantity of gold in the circulation, in the same way that a stone placed in a vase full of water will displace a volume of water equal to its own bulk.

Another similar addition to the currency will be followed

in the same way by a disappearance of another portion of gold; and if the increase be continued, the final result will be that all the gold will disappear from circulation. Besides being exported and melted into jewelry, it will be hoarded up by individuals and banks according to a law now to be developed.

57. *Gresham's Law.* This law is: *A cheaper or depreciated currency always tends to displace a more valuable one.*

At first sight this statement may seem to contravene one of the admitted principles of economics by implying that the worse article is preferred to the better one. But it is really in strict accord with fundamental principles. For the special purpose of making an exchange bad money may answer as well as good money. Now, we always prefer for any purpose the cheapest article which will answer that purpose, unless some evil to the person using it attends its use. For example, we do not make our axes out of gold or silver, but prefer the cheapest metal, namely, steel, which will answer the purpose. If there were a community which had to make silver axes because it had no steel, we should find that when that community began to trade with the rest of the world, the silver axes would entirely disappear and be replaced by iron or steel ones. The case is exactly the same when gold is replaced by paper. As silver can be put to other uses than making axes, so gold has other uses than that of serving as money.

For a similar reason a slightly depreciated paper currency also tends to displace any other paper currency which is at par with gold, always provided that the depreciated paper is accepted in trade. The rule is that it will be so accepted within certain limits. If a bank-note in New York is worth 98 cents on the dollar, a retail dealer would rather accept it and pocket the loss than lose his bargain or run the risk of offending his customer. Then, since the latter can only get 98 cents for it at a bank, he will pay it out in preference to a good bill. The very same motive will prompt the dealer who receives the bill to pay it out in preference to other bills, and thus the depre-

ciated money circulates with greater rapidity than any other. No more powerful stimulus can be given to trade than the feeling of everybody that it is for his interest to get rid of money as soon as he receives it. Moreover, if the depreciated currency is circulated in such quantities that everybody expects to receive it, then, instead of refusing it, the more gracious course on the part of the dealer is to raise the price of his goods. Thus, when the bulk of the currency will only bring 90 cents on the dollar, it is more to the interest of the trader to raise the price of his goods 10 per cent than it is to dispute with his customers about the money they offer him.

The most striking example of the operation of this law is seen when, owing to the depreciation of the currency, the metal in the minor coins becomes more valuable than the money in which larger payments are made. When, in the year 1862, our government began to issue paper money and, in consequence, a gold dollar became more valuable than a paper dollar, all the small silver coins disappeared from the circulation. The reason was that every man who paid four silver 25-cent pieces in change for a paper dollar gave more than the dollar was worth. Every man who paid out the 25-cent piece paid what was worth more than that amount. It might indeed seem scarcely credible that the whole community would put itself to great inconvenience for so insignificant a reason. But the result is nevertheless an historical fact of universal experience. It is probably to be explained, not by supposing that everybody hoards his small change in the case supposed, but that people here and there do so. If only one man out of ten, or even one out of fifty, keeps all the small change he receives, a scarcity very soon results.

Let us now return to the case of the infiltration of paper currency into a gold circulation. If it be continued, the gold will all be displaced. There will also be a slight, though not necessarily great or permanent, rise in the scale of prices. If, however, the addition of paper currency be continued, then, as already shown, prices will rise; or, in other words, the curren-

cy will depreciate. There is no limit to the possible amount of this depreciation. If the paper money is accepted, which it must be if made a legal tender, every one will expect to be paid in paper, and will charge accordingly. The gold dollar having the same value as before, gold will be at a premium, the banks will refuse to part with it, and private individuals will hoard it. It will be bought and sold in the public markets like any other commodity, to be exported to foreign countries in payment of goods, or to be made into articles of utility.

58. The reader can now form in his mind a symbolic picture of the operation we have described. To make this picture correspond as nearly as possible to the actual case in our own country, let us suppose that our material currency is of three kinds, gold, silver, and paper. The gold in the gold dollar is more valuable than the silver in the silver dollar, while the paper in the paper dollar is worth much less than either. The order of absolute value is then *paper*, *silver*, *gold*. By Gresham's law, the silver tends to displace the gold, and the paper to displace both.

The question may now arise how, on the law in question, it is possible for the gold or silver to circulate at all, if the paper money is preferred to make payments with. But the law does not say that the two heterogeneous currencies cannot circulate together, but only that one *tends* to displace the other. The solution of the difficulty is found in the law already laid down that, under given conditions of trade and industry, a certain volume of currency is absolutely necessary to carry on the trade of the country on a certain scale of prices. Our experience seems to show that if our material currency were exclusively of gold, we should need about fifteen dollars for each inhabitant, exclusive of the credit currency of the banks. If then we have a population of sixty millions of people, they will need nine hundred millions of dollars in gold to transact their business on a scale of gold prices. Since this amount is absolutely necessary to make the payments, it follows that if

there is less than nine hundred millions in paper money, it is absolutely necessary to make use of silver or gold. If the silver and paper together are less than this amount, some gold must still be used; otherwise prices would fall so low that a gold dollar would be worth less than a currency dollar, and this would lead to the importation of gold and thus remove all temptation to hoard it.

This condition that nine hundred millions is necessary may be represented to the mind by the contents of a vase which holds just nine hundred millions of any kind of dollars. The paper, silver, and gold currencies combined are then just sufficient to fill this vase when the scale of prices is on a gold basis. The fact that if we now infiltrate more paper into the currency gold will begin to pass out, is represented by supposing that if we now add more paper to the vase an equal quantity of gold will overflow. To make the comparison complete, we must suppose that the gold, though the heavier metal, tends to float to the top of the vase, the silver to float under it, and the paper to be at the bottom. Then if we continue to pour in paper money, the gold will soon have floated out in equal quantity. When the gold is all gone, the silver is at the top and begins to flow out. If so much paper is added as to fill the vase and displace all the silver, what will then happen? If there is any place to which the paper can flow, then it will begin to flow out. For example, if the paper is redeemable in silver or gold, then, when its volume exceeds nine hundred millions, people will take it to the banks or Treasury for redemption. Thus it will be impossible to get more than the nine hundred millions in circulation.

If, however, it cannot be redeemed, this is the same thing as saying that the vase is so closed that the paper cannot flow out of it. Then prices will rise, so that not only will more than nine hundred millions of money be in circulation, but more will be necessary to the business operations of the country. We may represent this state of things by imagining our vase to be

of some flexible material which will expand to any extent when we force paper money into it.

By thus forming a mental picture of the vase containing, from the bottom downwards, gold, silver, and paper money, and by imagining that as one or the other kind of money is added it displaces other money in the way described, or expands the vase when there is no other money to displace, we shall have an exact conception of the way in which different kinds of currency affect each other.

The law of expansion of price when the currency becomes too redundant explains a fact which frequently perplexes financiers who have experimented with paper money. It is that an issue of such money does not result in a lowering of the rate of interest, or indeed in any accumulation of money at the great centres of trade. The supply of money is apparently as scarce as ever or scarcer. The reason is that, on the higher scale of prices caused by the money, more dollars are required to carry on the exchanges of the community.

ILLUSTRATION OF GRESHAM'S LAW IN THE HISTORY OF THE COINAGE AND CURRENCY OF THE UNITED STATES.

From the establishment of the United States mint to the year 1834 our gold dollar weighed 27 grains 916¼ fine, and the monetary ratio for our coinage was 15 : 1. But the market ratio of value of the two metals was generally greater (cf. II. 68). The result was that very little gold was coined, and that little did not get into common circulation.

By the acts of June 28, 1834, and January 18, 1837, the weight and fineness of the gold dollar were changed to those stated in II. 68, making the ratio 16 : 1. The result was that gold came into circulation, and, after the gold discoveries of 1849, silver disappeared from circulation except as subsidiary coin. In 1853 the subsidiary coins also began to disappear, and, in order to keep them in circulation, Congress had to reduce their weight by seven per cent. This device worked until 1862. Then, when large volumes of notes irredeemable in coin were issued, gold soon disappeared from circulation, and began to command a premium. The subsidiary silver coin remained until the premium on gold began to approach ten per cent, and then it disappeared also, much of it going to Canada. It was replaced by postal notes. In 1873 occurred the great fall in the market-price of silver, which restored the small silver coins before the premium on gold fell to ten per cent.

CHAPTER XII.

OF ECONOMIC FALLACIES.

59. In a former chapter certain fallacies in economic method were described. These consist in a generally incorrect way of viewing the subject in its logical bearings, and do not therefore necessarily lead to erroneous practical conclusions. We have now to consider fallacies which lead men into incorrect views of public policy, and opinions of governmental action. Although these fallacies are unlimited in the number and variety of their forms, we shall find on analyzing them that most of them proceed from one central root, from which they divide like the branches of a tree. *The root of the whole system consists in mistaking the means of industry for its end.*

Let us first see how natural is the process of thought which leads us to concentrate attention on means rather than on ends. We have before us a mechanic who is, for the time being, out of work. In consequence he sees before him the danger that his family will suffer for the necessaries of life. He wants a supply of food and clothing to protect them against hunger and cold. But he does not say to his fellow-men, "Give me food and clothing," because he knows they cannot or will not do it when asked in this way. He knows that he must have money to buy the commodities he wants. He knows, however, that it would be equally useless to say, "Give me money." He knows that to get money he must work for it. So what he really says to the public is, "Give me work to do," although what he really wants is, not the work, but the necessaries which the work will yield him. The work is the means, and the only means, of commanding the necessaries, but not at all the end of his exertions. Yet it is by an evidently reasonable process that he is led to asking, not for what he wants, but for the means to

get it. So far, therefore, no fallacy actually shows itself, but only an open door through which an unending line of fallacies may come in.

60. The first fallacy of the line comes along in the character of what might pass muster as an obvious truth, and so is harbored by all classes.

The laborer thinks and says, *The greater the means the more perfectly the end will be attained; the more work I can get the more food and clothing I can buy for my family, and the more perfectly they will be fed and clothed.*

The employer thinks and says, *The greater the demand for my commodities the more employment I can give to my laborers and assistants, and the better off they and I will be.*

The man of business thinks, *The more buying and selling we can do the better off we will be, and the more perfectly our customers and patrons will be supplied.*

The shipper thinks, *The greater the quantity of goods I import and export the more pleased the country in general and my firm in particular will be.*

The statesman says, *The greater the amount of rolling and hammering of metal the more perfectly the country will be supplied with those requirements of wealth which are made of metal.*

Is not all this obvious and true? I answer, No. The propositions are not true as general ones; they are true under some conditions and not under others. Their truth or falsity depends on the manner in which the increase of labor and of activity in business is brought about. Among all classes of society we find men who are desirous of increasing the activities just described by increasing the necessity for them. The mechanic finds that he is out of employment because some large manufacturer has been introducing machinery to do the work which he, the mechanic, formerly did, so that his labor is no longer necessary. He therefore denounces the machine and tries to stop its products from reaching the public. If success-

ful, he will create a greater necessity on the part of the public for employing him. The carpenter knows that if the house which he has just built should burn down the owner would be obliged to build another. He therefore looks upon the fire feeling that, although a loss is inflicted on some one else, it is a gain to him by increasing the demand for his labor. The laborer feels that if a dam is washed away by a freshet, a benefit is done him by creating a demand for his labor. The statesman says that if we can keep people from getting iron from abroad, there will be more made at home, and thus all the makers will be benefited. All these we may call labor fallacies.

61. From this same root comes out another branch, which may be called the *money-fallacy*. Since money is what the laborer wants to buy with, and since it seems evident that the more money the government puts into circulation the more easily he can command it, he wants the government to issue all the money it can. The dealer in fancy goods wishes that economical man who is saving up his money to spend it more freely, because he can thereby give more employment to labor, or help somebody to do so. When a great body of summer tourists who had intended to go abroad are kept at home by the cholera, merchants congratulate themselves that the million of dollars which they would have carried away with them are to be spent at home and thus to benefit the country.

A curious feature of these fallacies is that they are the product of civilized training, and that a savage would see their logical character a great deal more clearly and quickly than the civilized man does. If we could give a savage a bird's-eye view of the country, and explain to him that from any cause whatever the people had made more clothing than could possibly be worn by the whole community, and had piled up greater quantities of food than they could possibly eat, and that a large body of industrious foreigners had thrust upon them more manufactures of iron and brass than they knew what to do with,

and that in consequence there was a great dearth of something to do, his first notion would be that this was a very happy state of things for the people of the country. It would require long years of training to make him conceive how it could be an unhappy state of things, and possibly the attempt might utterly fail. Now, in reality, and from the point of view of commonsense, the savage would be right. Looking at the subject from the savage's standpoint, we see the utter absurdity of supposing that it can be bad for a country to have more of the commodities of life within its borders than its people know what to do with.

62. The essential character and plausibility of the labor-fallacy may be shown by the following illustration. A farmer is carrying hay to market. The county authorities prepare for him a very fine smooth road. It is obvious to him that the better his horse pulls the more hay he will get to market. A stranger meets him on the road and finds him applying this principle by lubricating his wheels with sand instead of oil. Inquiring the motive of this ingenious device, the stranger is asked whether he can deny that the better the horse pulls the more hay he will get to market.

The stranger is not prepared to deny this principle.

"The more sand I put on my wheels the better I find my horse to pull." The stranger cannot deny this either.

"Therefore it is an undeniable conclusion that the more sand I put upon my wheels the more hay I will get taken to market."

The student can have no more instructive exercise than that of framing a series of ingenious devices by which the farmer could baffle every argument of the stranger to prove that this position was unsound. He could show that his neighbor, who put oil on his wheels, had a very poor miserable horse, while he himself had a strong and sound one, and all the result of the exercise he was thus enabled to get by the sanding policy. He could taunt the stranger with being the agent of some oil-mer-

chant who wanted him to buy oil in lieu of the lubricant which he could have for nothing on the wayside. He could demand if the stranger ever knew a case in which a horse that pulled well got less hay to market than one that did not pull at all. He could cite the case of a fellow-farmer who had been using oil and whose horse got so frisky and pulled so light a load that he ran away and destroyed the hay-cart and broke the farmer's leg.

The corresponding reasoning in the case of the laborer is simply this:

The more my labor is in demand the more perfectly my family will be supplied with the necessaries of life.

But the greater the need I create for my labor the more it will be in demand.

Therefore I advocate a policy which will make people need my labor.

So the dealer tries to make clothes as scarce and dear as possible in order that everybody else, mechanic, laborer, hod-carrier, merchant, and man of business, may be in greater need of clothes. The carpenter, bricklayer, and plasterer want houses to wear out as fast as possible, that the public need for houses may lead to their employment. The manufacturers of copper and iron want to cut off the foreign supply of their product, that the public may be in greater need of it. The cooper wants barrels made scarce, that the public may be in greater need to employ him. Thus the individual efforts of every man to collect the largest supply of the necessaries of life is accompanied by a general feeling throughout all society that other people ought to continue in need of these necessaries.

It goes almost without saying that no man ever applied the principle in his own individual case. We never heard of a man who, through some miscalculation, had bought more clothes than he could wear, throwing them away or burning them in order that he might have an inducement to buy more.

We have mentioned examples of these fallacies in a few of the many forms in which we daily see them in the newspapers,

in the speeches of Congressmen, the resolutions of labor and socialistic meetings, and tacitly and by implication in the restrictive rules of trades-unions. In some of these examples the fallacy will be obvious enough to the reader. In others he may find it to need illustration. We may take as a typical average case that of a house which is burned down. By this accident the owner is undoubtedly injured; but are not carpenters, bricklayers, and plasterers thereby benefited, either to a degree equivalent to the loss of the house, or at least to an appreciable fraction of it? We answer, No. It is true that these individual mechanics who may be employed to build the house may be benefited in a slight degree, but, as has already been shown, the demand for labor is not increased by the destruction of the house. The sum which the owner is now to spend in the employment of bricklayers, carpenters, and plasterers would, had the house remained, have been expended by him, or by those from whom he is to borrow the money, in the employment of labor in other forms. The demand for labor which is thus gained in one direction is lost in another direction, and one class gains at the expense of another. On the other hand, the owner of the house has lost its whole value, and, on the whole, the total loss to the community is measured by that of the house.

63. *Special Consideration of the Money Fallacy.* The fallacy which we have now to consider in detail, although from the same root as the labor fallacy, has little in common with it, and has an entirely different history. The labor fallacy may be described as affecting the great mass of the community in a mild form, and as not varying much from year to year or from generation to generation. The money fallacy, on the other hand, is periodic, overwhelming us, not at regular intervals, but from time to time, owing to the influence of changing events. The Americans more than any other people have been its victims. It was at its height during the ten years following the outbreak of the Civil War. During the decade following it

greatly subsided; and at the present time, although shared by a large party, is not doing serious damage. Yet it is constantly latent in human nature, and therefore liable to break out at any time after the disastrous effects of the policy it gives rise to on one generation have been forgotten by the succeeding one. It is therefore one which the student of economics should thoroughly understand. It consists in considering the monetary unit which we call one dollar as an absolute measure of value, deriving its existence and its value from law.

During the years 1862 and 1863 our government issued hundreds of millions of legal-tender notes to circulate as money. The result was a gradual but continual rise in prices, until the great body of things which people had to buy cost twice as much as before. Wise men said the dollar was depreciated to one half, but the public said the paper dollars were as good as any other dollars because they performed all the functions of dollars. No one had any difficulty in passing off all the money that he received, and having it accepted as that number of dollars which it pretended to be. Money, it was reasoned, was only the medium of exchange. A man gets it by selling only that he may buy with it; and if he can do this, what more is wanted?

The reply is: One very important thing more is wanted. He must not only be able to buy with it, but he must be able to buy a dollar's worth. The other replies, But he does get a dollar's worth. A dollar's worth is exactly what a dollar will bring, and he certainly gets that. You cannot enforce any law prescribing how much a dollar shall bring.

The economist admits all this, but yet claims that something is wanting. Although the man who takes a dollar cannot have any authoritative and legal understanding as to how much he can buy with that dollar next week or next year, yet he does want to feel a reasonable assurance that he can buy as much with it then as he can now. If he builds a house, neither the builder nor the law itself can guarantee him against the house being demolished by an earthquake, unroofed, burned by a fire,

or worn out by the action of the weather. But because he cannot have such a guarantee, it does not therefore follow that he should not care how combustible the materials are and how poorly the house is built. Notwithstanding the impossibility of the guarantee, he wants a house that will probably be as good next year as it is this, and which will endure for the use of his children and grandchildren.

Now, it is the same with a dollar. If he foresees a reasonable probability that a year hence his dollar will only buy him the tenth part of a dinner, then it can no more fulfil the functions of a dollar with him than the house which is sure to decay in a year can fulfil the functions of a house. He wants a dollar which will buy as good a dinner next year as it will now, and which, if he invests it, will buy as good a dinner for his grandchildren as it will for him. If Congress is to furnish him the dollar, the impossibility of an absolute guarantee of this sort does not justify the issue of a dollar which it is certain will not fulfil the required conditions.

The fallacy on which all this difficulty rests is that of looking upon the dollar as an absolute standard of value. During the period above referred to a gold dollar was worth two or more dollars in paper. This was a state of things which many intelligent people had a difficulty in understanding, and which they attributed to the machinations of speculators. They reasoned that both the gold and silver dollars derived their value from laws of Congress, and were declared of equal value by this authority. Therefore the value must really be the same, although in Wall Street and at the banks they were considered different. The answer to this is that a dollar is not a standard of value in any other sense than a foot is. If Congress should legalize two different lengths and declare each of them a foot, that would not make them equal. If it should direct the foot measure to be made of a kind of material which would shrink in a few days to one half its length, yet although this measure might be called a foot, it would not be of the same length. In declaring anything one dollar Congress only gives

it a name, but does not give a value. The principle involved may be expressed as follows: *Calling an object one dollar, and declaring it a legal tender for that amount, no more gives it a definite value than declaring a piece of metal to be a foot gives it a definite length.*

We qualify the word *value* here by the word *definite*, because, as we shall hereafter see, this proposition is subject to an important limitation. Thus the difficulty which men experience in understanding how there can be two values to the dollar is as absurd as a difficulty in seeing how two different lengths could each be one foot. The reason why a difficulty is felt in the one case which is not felt in the other is that length is something which can be made evident to the eye, while value is not. The inequality of two foot measures is made evident by merely putting them together and seeing how they look. The inequality of two dollars can be shown only by going into the public market with them and seeing how much they will respectively buy. Even then the inequality is manifest only to the eye of reason and not to the eye of sense.

Connected with this notion is the belief that the dollar derives its value from the government stamp upon it. This belief admits of a test so simple that it is wonderful how it can acquire the currency it does. Were it correct, a coin might be vastly more valuable than the bullion out of which it was made, and the excess of value would depend on the greatness and power of the nation by which it was stamped. But, as a matter of fact, leaving out the expense of minting, and the exceptional cases of fractional currency, the value of any coin is exactly that of the bullion from which it is stamped. The dollars of the poorest South American states, the sovereigns of England, and the uncoined gold bars fresh from the mines, all exchange in the markets of the world according to the amount of gold or silver in them.

ILLUSTRATIONS.

1. *Illustration of the Labor Fallacy.* "Have you ever witnessed the anger of the good shopkeeper Jacques Bonhomme when his careless son happened to break a square of glass? If you have been present at such a scene you will most assuredly bear witness to the fact that every one of the spectators, were there even thirty of them, by common consent, apparently, offered the unfortunate owner this invariable consolation: 'It is an ill wind that blows nobody good. Everybody must live, and what would become of the glaziers if panes of glass were never broken?' Now, this form of condolence contains an entire theory which it will be well to show up in this simple case. . . . Suppose it cost six francs to repair the damage; we say that the accident brings six francs to the glazier's trade—that it encourages that trade to the amount of six francs. I grant it. I have not a word to say against it. You reason justly. The glazier comes; performs his task; receives his six francs; rubs his hands; and, in his heart, blesses the careless child. All this is that which is seen. But if, on the other hand, you came to the conclusion that it is a good thing to break windows, that it causes money to circulate, and that the encouragement of industry in general will be the result of it, you will oblige me to call out, 'Stop there; your theory is confined to that which is seen. It takes no account of that which is not seen.'

"It is not seen that as our shopkeeper has spent six francs upon one thing he cannot spend them upon another. It is not seen that if he had not had a window to replace he would perhaps have replaced his old shoes, or added another book to his library; in short, he would have employed his six francs in some way which this accident has prevented.

"Let us take a view of industry in general as affected by this circumstance. The window being broken, the glazier's trade is encouraged to the amount of six francs; this is that which is seen.

"And if that which is not seen is taken into consideration, it will be understood that neither industry in general nor the sum total of national labor is affected, whether windows are broken or not.

"If the window had not been broken, the shoemaker's trade (or some other) would have been encouraged to the amount of six francs: this is that which is not seen.

"Now let us consider Jacques Bonhomme himself. In the former supposition, that of the window being broken, he spends six francs, and has neither more nor less than he had before, the enjoyment of a window.

"In the second, where we supposed the window not to have been broken, he would have spent six francs in shoes, and would have had at the same time the enjoyment of a pair of shoes and of a window.

"Now, as Jacques Bonhomme forms a part of society, we must come to the conclusion that, taking it all together, and making an estimate of its enjoyments and its labors, it has lost the value of the broken window."—*F. Bastiat, translated by Mrs. Fawcett.*

2. *Illustration of the Money Fallacy.* The following was written before the resumption of specie payments, at a time when the country had not recovered from the financial notions produced by the Civil War:

In the world of business "credit" includes the ability and the obligation to pay all demands in cash as they become due. A man or a firm that cannot do this has no credit, however excellent it may be in other respects. Suppose you should be travelling in a distant city and, going to the cashier of your hotel for change, he hands you a ten-dollar bill on the banking firm of Spread Brothers & Company.

"Are you sure this bill is good?" you inquire. "Good as gold, sir. The firm of Spread Brothers & Co. is the greatest in this State, possessed of unbounded wealth, and its operations extend over the whole globe."

"Then," you reply, "I suppose if I take this bill to their counter, they will pay it?"

"Pay it? Why, no, sir. You would be hooted by the small boys in the street and laughed at by Spreads' clerks. The credit of the firm is so excellent and all its debts so well secured by real estate and bonds worth millions of dollars that both the firm and the community concluded ten or twelve years ago that there was not the slightest need of their redeeming their bills, and they are never going to do it."

"I don't understand that kind of credit. In my State, credit paper is something which the party issuing is bound to pay when required; and if he does not pay, he has no credit, no matter how rich he is."

"Of course twopenny firms must pay. But we claim that a firm so great, so powerful, and so wealthy as that of the Spreads need not pay."

"Well, sir," you would reply, "I don't see what difference it makes to me how wealthy Spreads' firm is, or how well their paper is secured, if I cannot get any of their wealth in exchange for my bill. I always thought the advantage of having the paper of a wealthy firm was that it was sure to be paid; but if the richer the firm the less the need of paying, I would rather have the bill of some smaller house."

"Ah, you know nothing about finance, I see, and I will get you some foreign money rather than argue further with you."

If a hotel cashier should talk in this way to you, you would be a little puzzled to say whether he was joking or in earnest: and yet great statesmen do argue in just that way about our greenbacks. There are bills to the amount of four hundred millions of dollars afloat, reading, "The United States will pay the bearer — dollars." Yet if you should take one of these bills to the government's counter asking that this promise be redeemed, the clerks would laugh at you. A year or two since some one did this very thing, and the newspapers speculated on the man's sanity, while a Treasury official thought he was only trying to make himself notorious. If a politician tries to justify permanent non-payment, he will talk about the credit and wealth of the nation exactly as the hotel clerk talked about Spread Brothers & Co.—*The A B C of Finance, by S. Newcomb.*

2. An apt analogue of the money fallacy may be constructed by supposing that the people of St. Louis deemed it greatly to their interest that the flow of the Mississippi should be increased. Let us suppose that in order to bring this about they erect powerful machinery which is to turn immense paddle-wheels whose blades dip below the water and project it down the river. As each wheel turns it causes a great rush of water from it, and thus an apparent increase in the flow. If we could imagine a person with as little idea of the flow of the river as a mathematical quantity as the ordinary man has of the industrial flow, as such, we may see how strong the impression such a person would have that the flow of the river is really increased by the machinery. His eyes show him the rush and foaming of the water wherever the machine operates, while the tide goes on, apparently the same as before, wherever it does not operate. The way in which we should show this man the error of his views is also analogous to that which we have employed in showing the monetary fallacy. We should say to him:

"The flow of the river past your city is necessarily equal to the sum total of the water which comes to it from the mountains. Your machinery cannot possibly change the streams from the mountains, and therefore it cannot change the flow of the river. True, there is, as you say, a greater flow where your wheels act; but this is necessarily accompanied by a diminution of the flow in the great masses of water below, which you do not see."

The reason why a mistake such as this is so common in the case of economics and not possible in the case of the river is that in the latter the mind can form a conception of the real state of things without special training, while in the former it cannot. If we imagine a person spending his life in managing the supposed paddle-wheel and seeing the rush of water from it, without ever forming any conception either of the magnitude of the river or of the source of its waters, we see how naturally he might be gradually led to believe that the flow of the river depended on his machinery. But this person would be in the same state of mind as the average man in relation to the course of trade and industry. In showing the latter the true relations of things we do for him what we should do for the supposed man in showing him the source and magnitude of the river.

EXERCISES.

1. Consider the following ways in which a man may gain wealth, and investigate in each case whether his gains are to be regarded as additions made by himself to the total wealth of the country without being detrimental to the rest of the community, how far they are made at the expense of particular individuals with whom he may have had dealings, and how far as made at the expense of the community in general:

I. He bets with a broker about the future price of stocks, and wins.

II. He invests in stocks and bonds, which rise in price in consequence of increased prosperity of the railways and manufacturing companies which issue them.

III. He invents a new method of boot-making, and employs a great body of artisans in making boots by this method at a profit to himself.

IV. He borrows money and builds a railway, the dividends of which pay all the interest on his debt and yield him a large additional income.

V. He patents a new sewing-machine, which turns out to be a great success.

VI. He discovers and buys a valuable mine.

VII. He sets up a large grocery-store, and manages to sell so cheaply as to attract all the customers from a great number of other stores, and compel the latter to retire from business.

VIII. He discovers an excellent silk-maker in the interior of France, buys his products, and sells them at a profit in New York.

2. Consider also whether, in any of the preceding cases, the community at large necessarily gains, as well as the man who makes the money, and in what their gains consist. [Apply the principles of Chapter V.]

3. Show that it is impossible for a nation to adopt such a policy that there shall be any great continuous and unceasing increase in its stock of the precious metals, and that the general world's stock of those metals tends to distribute itself among all nations in proportion to their need for using them as money.

4. Explain how it is that in a very poor community the volume of the currency is in a yet smaller proportion than the volume of business transacted. [This involves the conclusion that the rapidity of circulation is greater in such a community. Cf. Chap. II.]

5. In a new country, where the rate of interest is high, people are most desirous to borrow money. Suppose wealthy foreigners to loan them all the gold and silver they wanted, but with the enforced stipulation that none of it should be exported: what would be the economic effect upon the community? Would it be materially beneficial?

6. Suppose the loan made without stipulation: what would the community do with the money? What would determine the benefit they would derive from it?

7. From your answers to the two preceding questions, explain what is really done when foreigners invest capital in a country where the rate of interest is high. Does the act of investment commonly consist in sending money thither? If so, what becomes of the money? If not, what is sent?

NOTE. In all such questions as these it will assist the student to begin with a simple concrete case. For example, suppose that in the new country,

Colorado for example, a great profit can be made by working a mine and building a railway to it. So a Colorado banker offers ten per cent per annum interest on all money borrowed. One London capitalist loans him $10,000, which he ships as gold, and another sends him a cheque on his London banker for £2000. Trace out what the Colorado people will do with the gold and the cheque, drawing a diagram of the monetary and industrial operations to which the loans give rise.

8. Suppose that during the Civil War our government had adopted the policy of preventing the Southern States from importing anything but gold and silver, but had allowed them to export anything they pleased: what would have been the effect upon the price of commodities within their limits, and upon the power of the Confederate Government to prosecute the war?

This presupposes the blockade modified to this extent: that no ship would be allowed to enter the Southern ports if she carried anything except gold and silver, but she might carry in as much of these metals as she chose.

On leaving the port no restriction is supposed to be placed upon what she carried out.

If one should answer the foregoing question in this way: Gold and silver are the sinews of war, and hence the free introduction of these articles would have increased the power of the Confederate Government to carry on the war;—would he be correct?

If one should answer it by saying this policy would have been demoralizing to the Confederate Government by acting as a bribe to the people to expend all their energies in raising cotton for export, instead of employing them in war, would he be correct? Could the importation of anything which could not produce either sustenance or munitions of war help a people so situated?

It is essential to a complete discussion and conclusion on this subject that the student should consider to what extent the Confederate Government could have got possession of the gold imported. This action would have depended upon their power to get possession of the cotton or other goods exported; this, again, would have depended principally upon the willingness of the planters to raise cotton, not for their own benefit, but for that of the government.

9. The inhabitants of a city conclude that hack-drivers are an exceptionally meritorious class of citizens, and so resolve to expend all their surplus income in hack-hire. Are hackmen going to be permanently benefited? What will be the economic effect? (Cf. III. 35 and Bk. IV., Chap. VI.)

10. Are we to regard the consumption of commodities as productive of any benefit to the producers, or is that benefit confined to the consumers? For example, are we to regard an increased consumption of tea as benefi-

cial to grocers? As beneficial to the inhabitants of China? Explain why the answer is not the same in all cases.

11. Trace the economic effect of the frugal New England population putting their money into savings banks. What do such savings really consist in?

12. Show the relative advantages to a spendthrift of living in a frugal and of living in a free-spending community. Define the difference between two such communities.

APPENDIX TO BOOK IV.—THE RELATION OF DEMAND FOR COMMODITIES TO DEMAND FOR LABOR.

It is the plan of the present work to present to the reader in the first four books only such a body of doctrine as is generally accepted by all economic reasoners who have completely mastered the subject, and thus to avoid breaking the current of thought by arguments and discussions on controverted points. But the theory of the employment of labor which has been presented in the preceding chapters may form an exception to this rule. This theory is, in one point, in apparent discord with certain views held by the best economic reasoners of the time. This discord can be settled only by a very careful analytic comparison of the hypotheses and conclusions of the two theories.

The gist of the view which has been laid down in the present work is this: That, so far as the current rate of wages and the immediate interests of society at large are concerned, it makes little or no difference whether the owner of money expends it in one direction or another; and that the real point on which the remote interests turn is whether the spender employs his money for an object terminating in his own gratification, or in an object involving an increase in the wealth which can be commanded by society at large. As special examples:

I. If the manufacturer of cloth buys wool and other materials with a view of enlarging his production; if a farmer buys manure to increase the fertility of his field, or a plough and team of horses to cultivate a new field, then he will ultimately benefit society by placing at its disposal a larger or better supply of cloth and wheat.

II. If I employ men as outriders for my carriage, or servants to wait upon me, I render no benefit to society, but leave the account even. But if I employ these men in making cloth or raising wheat, then I benefit the rest of society by placing at its disposal larger or better supplies of food or clothing.

III. If I have been in the habit of spending a thousand dollars of my income annually in clothing myself in fine velvet, and I change my mode of expenditure by giving up the velvet and spending the money in paying a man to sing and dance for me, I merely change the direction of a certain portion of the industry of the country from the work of making velvet to the work of dancing for me, and the interests of society at large remain unaffected by the change.

The other theory, which is not necessarily in opposition to the above views, but which is often supposed to be, is very fully developed by Mr. John Stuart Mill, in his *Political Economy*, Book I., Chapter V., § 9, and also by Mr. J. L. Laughlin, in his abridged edition of Mill, pp. 87-92. It is embodied in the maxim that "a demand for commodities is not a demand for labor." We must understand the meaning and application of this maxim before we can make any comparative analysis of it. Taken

literally it is undoubtedly correct, as has in fact already been shown. Buying things does not make them. When the ownership of a great factory is transferred from one company to another, the conditions of production are in no wise altered. The producing ability of society at large is the same after a bale of goods has been sold as it was before. All that mere buying and selling consists in is the transfer of rights, powers, and duties from one person to another, and not the production of such rights, powers, or duties.

Has this fact any necessary antagonism to the theory which has been laid down? I think not. It is rather certain corollaries drawn from it that are in antagonism to it, and it is with these corollaries and not with the maxim itself that we shall be concerned.

If we regard the theory as a complete one, which some economists do, then the question whether one does or does not benefit labor by his expenditure turns entirely upon whether he purchases goods or employs labor, and does not depend upon the kind of goods he purchases or the work which he employs the laborers to do. Now, this conclusion admits of a very easy *reductio ad absurdum*. The farmers of the country employ a great body of laborers every winter, spring, and summer in sowing, cultivating, and harvesting crops. If we conclude that the main question is not, "What shall we employ our laborers in doing?" let us suppose that the farmers employ them as liveried servants to drive their carriages and wait on table, leaving all the crops unharvested. It is perfectly clear that society at large will suffer by such a policy. It must be therefore that some other question than that of "demand for labor *versus* demand for commodities" comes into play.

This *reductio ad absurdum* proves that the theorem is not complete, but does not disprove it in all its applications. The direct issue between the two applications may be seen in the following propositions. The doctrine of the present work is:

If, in lieu of clothing myself with fine velvet, I expend the same income in paying a man to dance for me the year round, I merely change a certain amount of the industry of the country from the work of making velvet to the work of dancing, and the interests of society at large are unaffected by the change.

The opposing reply of Mr. Mill is: *No, you do more than this: you transfer a certain portion of your consuming power from yourself to the dancer; and you direct a certain portion of the industry of the country from the work of supplying yourself with velvet to that of supplying your dancer with food. You thus confer a positive benefit upon society at large by increasing the manufacture of food in compensation for which you have given up wearing velvet.*

The comparison of these opposing views requires us to enter upon some minute and somewhat intricate considerations. There is a certain advantage in the direct employment of the dancer, inasmuch as he gets the entire benefit of my expenditure, whereas, when I buy the velvet, the great armies

of men who were directly or indirectly engaged in producing that velvet do not get all the benefit of my money, because a certain portion of it is absorbed in the cost of making the numerous exchanges which have come into play. Therefore, could we do away with the labor of exchange, we might employ the men now engaged in buying and selling in the sole labor of producing, and thus society at large would be a gainer. Thus, in so far as labor of exchange is saved, Mr. Mill's view has a certain amount of correctness.

But practically can we make any alterations in the ratio of the number of men engaged in actual production to those engaged in exchange? Practically no such saving in exchange appears to be possible. The proportion of the community which has to be engaged in the work of exchange is fixed by the conditions of the country and of trade, and cannot be altered on any considerable scale.

Returning now to the main question we have to begin by recalling several preliminary propositions, which must be accepted by all who really understand the case, and which we shall therefore not stop to establish.

I. The typical laborer is one who has not accumulated any considerable amount of wealth for himself, and must therefore depend for his support upon the capital of others who pay him for his services.

II. The wages which he receives may all be expressed in terms of food, clothing, and shelter, for which we may use the general term *sustenance*. If he is paid in money, we may regard this money as an order on society to supply the laborer from its storehouse with the equivalent of the money in sustenance. Thus the laborer is to be regarded as an agent producing sustenance and at the same time consuming it.

III. The benefit of his labor to society at large, and especially to other laborers, depends upon his producing for other laborers an amount of sustenance equal or superior in quantity or quality to that which he himself consumes. That is, as he eats his daily bread and wears out his clothes, and as the house in which he lives is going to decay, he must by his labor produce more than an equivalent in some form of clothing, food, or houses for his fellow-laborers.

IV. We can therefore measure the benefits rendered to laborers at large by any economic cause by determining whether that cause results in a greater production of sustenance for laborers.

The counter-proposition of Mr. Mill is now tested by considering the relative situations and activities of the spender of money, and the maker of velvet or body of makers, and a dancer or body of dancers, in the following way:

We have a first agent A (Fig. 8), comprising a body of men who receive the stream *a* from society and have been spending it upon fine velvet bought from the velvet-maker V with the equal stream *b*. The velvet-maker V has a capital, and a body of operatives to whom he pays the stream of wages *c*. The stream *d* purchases subsistence for the operatives.

A time now comes when A gives notice to V that after his present orders

are filled he will want no more velvet, and in lieu of spending his money on velvet he will spend it on men to dance for him. To make the cases in every respect equal, we may assume that he will want a theatre equal in value to V's fixed capital, and that V can transform his capital into the required theatre. Such are the fundamental hypotheses common to the two theories.

Now, according to the view laid down in this book, the result of this action on A's part will be that V will say to his men: "The demand for velvet will cease; I can therefore no longer employ you in making velvet. But A, my customers, will want dancers; I am going to build them a theatre, and you can dance for them at the same wages I have been paying you." The result will be that shown in Fig. 8. A receives the same monetary flow *a* from

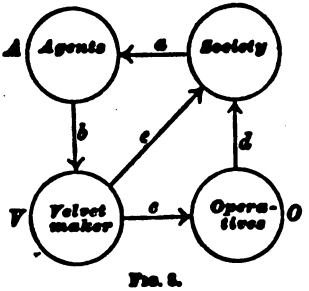


FIG. 8.

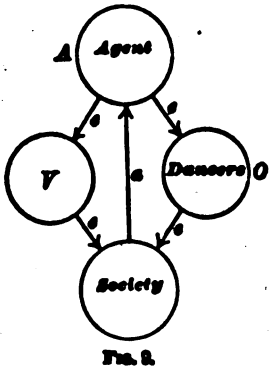


FIG. 9.

society. He pays one flow to V, the former velvet-maker (now a manager of his theatre), and another to a body of dancers who were formerly operatives. Thus the sole change is that V and all his operatives have gone out of the business of making velvet into that of dancing. Society at large is unaltered by the change, whichever way it occurs, because all it knows of the matter is that it supplied food to the total number of operatives employed by V, and when they take to dancing, the supply and the money they pay for it remains just the same as before.

According to Mill's view, the change in A's expenditure will work in this way: When A advises V that he is going to stop wearing velvet, V will say to his operatives: "I can no longer employ you in making velvet, because the men A who have been buying my velvet are going to stop wearing it. But these men are going to employ dancers to dance for them, and those dancers will want sustenance. Therefore, instead of employing you in making velvet for A, I am now going to employ you in making sustenance for A's dancers." In other words, the velvet-makers, instead of responding to A's demand, "We want dancers," will respond to the demand of his dancers, "We want sustenance."

This supposed state of things is represented in Fig. 10. The stream *a*, instead of passing from A through V and O to society, as in Fig. 8, now passes from A to D in payment for dancing. Thence it passes from D to O in payment for the sustenance which V and O are now making, and from this point we have the same draft on society as before.

Mr. Mill's conclusion is that a certain portion of the industry of the country performed by V and O has been changed from the work of making velvet to the work of making sustenance for D. Thus the production of sustenance is increased, and thus, in accordance with the principles laid down, laborers are benefited. Thus we have two apparently contradictory results well made out, of which only one can be really true. Which is true? Are we to regard Fig. 8 as changed into Fig. 9 or into Fig. 10?

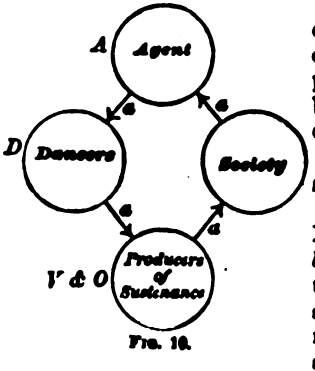


FIG. 10.

A very little consideration will show us one essential difference. In Fig. 9 we are dealing with absolutely the same body of persons as in Fig. 8, namely, a spender or body of spenders A, a body of velvet-makers V and O, and society.

Thus the comparison is made with the same persons.

Now, supposing Fig. 8 to change into Fig. 10, *we bring into consideration a new body of men, D.* Now, A did not make these men on the spot to dance for him; and even if he could do so, society would not be benefited, because the streams to and from society are precisely the same in Fig. 10 as in Fig. 8. Very clearly, before we can decide whether Fig. 10 is more favorable to society at large than Fig. 9, we must know what these men D were doing in Fig. 8. It is at this point that the writer takes exception to Mill's theory. It withdraws from society and brings upon the scene a new body of men, D, and at the same time brings in an increase of subsistence for the support of these men. It therefore proves nothing. We can conclude nothing until we know what the men D were doing in Fig. 8, where they form a part of society. Now, we may make two hypotheses—that they were employed in Fig. 8, or that they were for the time being unemployed. If we take the most popular hypothesis, we shall undoubtedly suppose them to be unemployed.

There are constantly in the whole country a body of unemployed men, ranging from a few thousand to perhaps half a million, or, we may say, one, two, or three per cent of the whole population. The popular economy holds these men up to view and informs us that if we will, by increasing the volume of the currency or taking some other measures, find employment for them, all will be well; and it tacitly assumes that thereafter nobody will be out of employment. As a matter of fact we have shown that this body

of unemployed men is of the same general magnitude, and subject to the same kind of fluctuations, no matter what system we adopt, and that it is inseparable from the ordinary fluctuations in production and consumption. We cannot therefore look upon D as representing a permanently unemployed class to whom we have given permanent employment. All we have done is to take out of society, in imagination, a body of men D, and thus to deprive society both of their producing and consuming powers. Their consumption, which formerly came from society, now comes from V; that is, the increased amount of food produced by V is the economic equivalent of the sustenance which D produced when a part of society as in Fig. 8. We have simply changed the occupation of D from that of production in general to dancing, and the occupation of V and O from that of producing velvet to that of producing sustenance. Thus the interests of society at large remain unaltered.

It therefore appears that the logical conclusions are the same even when we adopt Mr. Mill's theory of the change. It is therefore unnecessary to decide whether the outcome of the change is represented by Fig. 9 or Fig. 10.

The case of Fig. 10 illustrates the way in which Mr. Mill and his disciples prove their theory. They bring upon the stage a body of unemployed men and show that though these men should be surrounded by a crowd of customers crying, "We want velvet," "We demand such food as you know how to make," and offering them money for the velvet and the food, yet this demand would not be of the slightest use to the men, who could be employed only by some one offering them wages to go to work, and finding the necessary capital for that purpose.

If this is true and obvious, as of course it is, why devote so much attention to refuting the deductions from it? I reply, because the fact is fallaciously used to set aside one of the most fundamental principles of economics. A single example will suffice. It was shown in Chapter VIII., preceding, that labor-saving machinery cannot diminish the sum total of demand for labor, because all the money saved goes into the market to purchase other products of labor. Mr. Mill says of this theory:

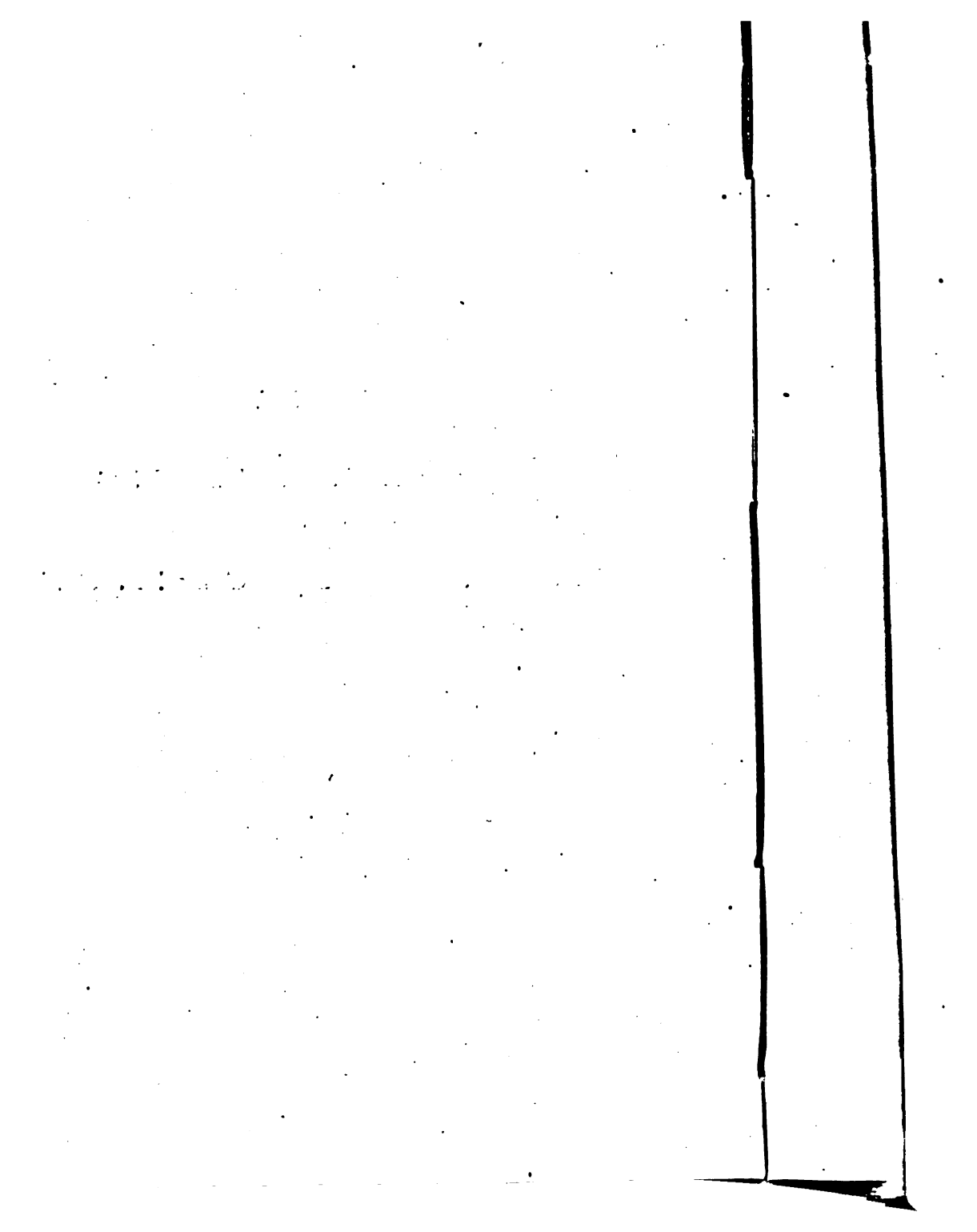
"This is plausible, but involves a fallacy; a demand for commodities being a totally different thing from demand for labor. It is true, the consumers have now additional means of buying other things; but this will not create the other things, unless there is capital to produce them, and the improvement has not set at liberty any capital, even if it has not absorbed some from other employments. The supposed increase of production and of employment for labor in other departments therefore will not take place; and the increased demand for commodities by some consumers will be balanced by a cessation of demand on the part of others, namely, the laborers who were superseded by the improvement, and who will now be maintained, if at all, by sharing, either in the way of competition or of charity, in what was previously consumed by other people."

Any one who has mastered the theory of the demand for labor set forth in Chapter VI., *ante*, should be able to grapple with what seems to the writer a totally groundless conclusion. It is true that the act of buying commodities with the money saved by the machinery does not, in itself, employ labor. But it transfers the employing power to the seller of the commodities, and, even if the latter transfers it to another, it must after a very few transfers reach laborers as wages, and then the result is the same as if the saver had employed labor with it in the first place.

Mr. Mill's reasoning in fact seems to involve the conclusion that if the crowd of men whom we have pictured as surrounding the unemployed laborers and crying for velvet which they could not furnish should go to all the velvet manufacturers within reach, and buy out for cash all their stock on hand, as well as give them orders at double prices for all they could make during the next year, that course would not give employment to one of the unemployed men. No matter how fabulous the sums offered and paid by the men hungry for velvet, their demand is only for a commodity, and therefore does not set free any new capital for the use of the velvet-makers, and so the latter cannot employ any new men.

BOOK V.

APPLICATIONS OF ECONOMIC SCIENCE.



BOOK V.—APPLICATIONS OF ECONOMIC SCIENCE TO QUESTIONS OF POLICY.

CHAPTER I.

THE LET-ALONE PRINCIPLE.

1. Most questions of governmental policy cluster around one central maxim, founded on what is sometimes called *the let-alone principle.* This maxim was enunciated by the Physiocrates, a school of French economists and philosophers which arose early in the last century. Its familiar form was, *Laissez-aller, laissez-faire;* which may be freely paraphrased, "Let things take their own course." It was directed against the system, which was then almost universal, of governmental interference with the freedom of intercourse between nations and individuals. It opened up a new line of thought, founded on the consideration that the individual man was a being better able to take care of himself, in bargaining with his fellow-men, than any government was to take care of him. We have to consider what the maxim means, on what grounds it rests, to what limitations it is subjected, and what are its relations to the progress of society.

Since the maxim is directed against interference of government with the individual, we must begin by considering the relations of these two parties. We may consider government in this case as the instrument for the combined action of society at large. Thus the relation of the individual to government means his relation to society; that is, to all his fellow-men. In this connection we must remember that society can be nothing

more than an aggregate of individuals, and can have no interests separate from the interests of individuals. It would be a contradiction in terms to talk about a society which was wealthy and prosperous while its individual members were poor and starving.

We may consider the maxim as expressing either a policy or a principle. Considered as a policy it claims that government should not interfere with the rights of individuals, or bodies of individuals, to direct their industry into such channels as they may deem best, and to make such contracts with their fellowmen as they may deem mutually advantageous. The principle or law embodied in the policy is that non-interference on the part of the government is best for the progress of society, so far at least as the operations of its wealth-producing powers are concerned. These two views of the maxim are practically equivalent, because it is only on grounds of general good that government can be required to abstain from interfering, and thus the principle and the policy necessarily go together.

2. *Economic Significance of Laissez-faire.* Like all other very general principles in social science, the let-alone principle may have a very wide range of meanings and applications. In order to treat it definitely it is necessary to distinguish between these applications, and to find in what its economic significance consists. Taken in its widest possible range, it is sometimes interpreted as meaning that every man should always be at liberty to do as he pleases. But it is evidently impossible that he should enjoy this liberty. He might want to fly, but he cannot do it. His liberty is necessarily limited by the conditions which surround him.

The first class of limitations are those imposed by the physical necessities of the case. Two men cannot exist in the same place at the same time. They cannot eat the same loaf of bread. Practically a man cannot wholly rid himself of the society of his fellows.

Yet further limitations are imposed by the mutual and equal

rights of men. One man cannot be allowed to assault another, however much he might like to do it. The sufferer from a contagious disease will be quarantined or isolated by his fellowmen. One man is not going to allow his neighbor to erect an inflammable house adjoining his own, or to suffer nitro-glycerine to be stored in his cellar.

Again, there are certain generally recognized necessities of society which lead governments to demand certian duties from their citizens. Of these the most important is the payment of the taxes necessary to the public support. In most countries this includes a contribution to the education of the rising generation. In case of war every male citizen may be required to bear arms against the enemies of his country.

The above three limitations upon the let-alone principle have little relation to economic questions. The burning question of the day, in applying economic principles to governmental policy, is whether any economic advantage can be gained by government interference with the liberty of the individual. If we strictly limit our question in this way, we shall exclude some questions which the economist often discusses. One of these is that of limiting the employment of children in factories. Legislation to effect this object has been opposed by economists. If the purpose of the legislation had been the increase of wealth, the ground taken by the economist might have been sound. As a matter of fact, however, the purpose was the general good of society in the future, which is not a purely economic question, and therefore cannot be treated from a purely economic point of view. Owing to the confusion which often arises from not keeping in sight the distinction here indicated, we shall define it precisely:

An *economic question* is one whose issue concerns only wealth and its enjoyment, including the power of each individual to gain the maximum amount of gratification from his labor. When other subjects are involved in the question, it ceases to be a purely economic one, and therefore an answer founded solely on economic considerations may not be conclusive.

3. We may continue our examination of the principle by correcting a misapprehension concerning it. It is very commonly considered as a policy invented by the economists, and of doubtful applicability; sometimes, indeed, as a mere abstraction to which it is impossible to give a definite shape.

On the contrary, the maxim merely expresses a fundamental law on which civilized society is organized, and one which, under certain limitations to be hereafter considered, is obeyed in most of the internal relations of all civilized communities. In practice every civilized community allows each of its members to engage in any occupation he chooses, and to make any bargains with his fellow-men which he deems just, so long as he does not interfere with their equal rights. It is on this basis of individual freedom that the whole fabric of modern society is erected. All that the economists did was to state and point out the principle, and to claim for it a wider range than had formerly been allowed it.

The most common argument against this view is this: In early and primitive forms of society, when population is sparse, governments weak, and each man under the necessity of protecting himself, the principle may well apply. But as civilization develops, and population becomes denser, the relations of the individual to society become so intimate that he has to give up more and more of his natural rights, until he has so few left that it is not worth while to consider them.

This argument is founded on a complete misapprehension of the facts of the case. The let-alone principle, as a principle, is quite modern; and as a policy it is almost entirely a growth of modern times. Until within two centuries there was no widespread idea of the individual having any rights simply as a human being. He was born a citizen of some country, or a subject of some king, and was allowed such rights at home as law or custom sanctioned. But if he left his country, it was only as civilization advanced that any rights at all were conceded him.

One illustration will make this plain. To-day a person with money enough to pay his way can travel around the world,

coming into contact with thousands of men without meeting any one to challenge him, or to demand whence he comes, whither he goes, or why he is not attending to his affairs at home. Two or three thousand years ago he could not have travelled through Europe without being threatened at every step with robbery, imprisonment, slavery, or death.

The fact is that although, with the progress of society, government has within its sphere grown more powerful and efficient, this sphere has not been greatly enlarged. But the sphere of individual activity has greatly enlarged, and with the spread of knowledge the individual has become better able to maintain his rights against society, and governments are becoming less and less able to manage him. Let us look, for example, at such great public works of antiquity as the pyramids of Egypt, and think how large a proportion of the laboring energies of the nation which erected these structures could be commanded by its ruler. We shall then see that although civilized governments of the present day could undertake works equally great, they could not command the same proportion of the labor-power of the people. The labor-power of the nation has increased many-fold, but the proportion of that power which government can command has diminished in a nearly equal degree.

4. *The Grounds of the Let-alone Maxim.* These grounds are briefly as follows:

I. *The Ground of Right.* In the conscience of every civilized man there is a feeling that he has the exclusive right to the use of his own faculties, and that society at large, that is, his fellow-men, should not interfere with his actions so long as he does not interfere with theirs. The recognition of this right in each individual carries with it the right of any two or more individuals to make such bargains as they may deem best for their interests. For example, if a farmer deems it to his advantage to borrow money from a capitalist at twelve per cent interest, and government comes in with a law that

no one shall loan money at a higher rate than six per cent, thus compelling the farmer to go without the money, and the capitalist to seek some less profitable investment, this is an interference with the natural rights of both parties to make their own bargains.

It may be objected to this claim of right that after all it amounts to nothing, because it is of no practical use for one to claim a right which he cannot persuade or force others to respect. The reply to this is that we may call it a power as well as a right. As a matter of fact the civilized man can and does enforce the right we have described in nearly all the every-day relations of life. As a general rule the adult man can and does use his faculties as he pleases, so long as he refrains from interference with the rights of other men to use their faculties as they please. The only cases in question are therefore exceptional ones, and the maxim then amounts to the assertion that government, or society at large, if we choose so to consider it, has no right to exercise and claim a power in cases which are exceptional, and where the exercise of the power is merely vexatious.

II. As a matter of *policy*, the let-alone principle is supported on the ground that the processes of production and distribution are conducted in the most advantageous manner when left to the management of individuals, each of whom seeks only his own interest. If a railway is to be built, self-interest will prompt its projectors to make it connect those points and follow that line where it is most wanted, because there people will pay highest for its use. If the public want an article, that fact will stimulate its manufacture. If the makers charge too much for it, other makers will compete and thus lower the price. The prices of any class of goods are highest where the goods are most wanted, and lowest where they are least wanted. Thus the self-interest which prompts traders to buy in the cheapest and sell in the dearest market prompts them to do what is best to satisfy the wants of the public. If an enterprise does not pay its projectors, that fact shows that it does not confer upon

the public a benefit sufficient to compensate for the capital and labor bestowed upon it. In general, since no man is required to do anything which is not to his advantage, no bargains will be made except such as, in the judgment of the parties, will benefit both.

5. *Criticism and Defence of the Let-alone Policy.* If we consider the preceding argument as valid in its widest and most unrestricted application, we shall see that it rests upon two tacit assumptions, namely:

1. That things are to be considered good in proportion to the desire of people to have them. In other words, government need have no other standard to decide whether an end is good for society than the willingness of men to labor for the attainment of that end.

2. That individuals are the best judges of what is for their own interests.

Examination shows that there are, or may be, many exceptions to each of these premises.

I. Great numbers of people desire, and are willing to pay for, things which are injurious both to themselves and their posterity; quack medicines and intoxicating liquors, for example. In such cases it cannot be concluded by any single principle that government should not interfere with the liberty of the individual. As another example, children may, with pecuniary advantage to their parents, be employed in a way which will injure their health and cripple their mental and physical development. It is clear that we have here a good case for governmental interference.

To consider the subject in a general way, it is a universally accepted principle that the main duty of government is to restrain individuals from infringing upon the rights and liberties of their fellow-men. We may extend this principle by saying that it may also be the duty of government to restrain the individual from acts injurious to the morals of his fellows or to the general good of posterity.

II. It is not true that the individual always knows what is best for his own interests. This is markedly the case with the laboring classes, whose opportunities for learning what places offer them the best means of living are very restricted, and whose intellectual inability to judge what public action will promote their happiness leads them to form combinations injurious to themselves. They are liable to be led into making disadvantageous contracts with employers who are able to overreach them. Hence several of the best governments, including that of England, pass laws restricting the freedom of contract between various classes of laborers and their employers.

6. *Limitations on the Preceding Criticisms.* The preceding criticisms show that the let-alone principle cannot be regarded as a necessary and universal truth, like a theorem of geometry. But they are insufficient to prove the principle entirely invalid. Consider first the case in which the government is asked to restrain the individual from doing what would be harmful to himself or his family. To establish a case for remedial legislation, it is not sufficient to show merely that individuals use their liberty to their own injury. Two other propositions must also be established:

Firstly. That the individual can be really restrained, or the evil he does himself be prevented, by the action of law.

Secondly. That in executing the proposed law other evils equally great will not follow.

For example, in considering legislation to prevent the evil of drunkenness, we must first ascertain whether such laws really do prevent the drunkard from getting liquor, or, failing in this, whether they save young men from being led into temptation. Then we must consider the rights of those who have legitimate uses for alcoholic liquors, and compare the wrong done them by prohibitory laws with the benefit done society by preventing drunkenness.

In answer to the second criticism, the question is not

whether each person is a perfect judge of what is best for his own interests, but whether Congress, or society at large, acting in any way, is, practically, a better judge than he is. Now, leaving out exceptional cases, whatever we may say of the imperfect judgment of the individual, it is certain that no legislative power is a better judge of what is for his good than he is himself. No public body can so well judge whether an enterprise will pay as the men who are to succeed or fail with it.

There is a reason stronger than any yet given why men are better judges of their practical affairs than legislative bodies can be, which we have already hinted at in treating of scientific method. It is an observed fact that when a man of good understanding and fair business capacity enters upon any operations or projects in which his own personal interests are involved, he maintains throughout a clear conception of what those interests are, and of the effect upon them of each cause which may come into play. It is equally an observed fact that when such a man studies the public interests, this power of seeing the effect of each cause upon those interests fails him. The reason of the failure is not so much a mistake in estimating the effect of the cause as the want of a clear idea what the public interests really are. The interests of fifty millions of people form an aggregate so complex that they cannot be grasped by the mind without a considerable power of abstraction; that is, the power of dropping out of consideration all non-essential conditions of the problem, while keeping a firm grasp on all that is essential. Now, this power is not universally possessed by men, and is much rarer among men of action, who control public affairs, than it is among scholars.

7. *Limits of Application of the Let-alone Principle.—The Keep-out Policy.* This world in which we are placed is not, so far as we have discovered, constructed upon a system so simple that we can frame any universal laws for the conduct of mankind. We must therefore expect to find limits to the applica-

tion of all principles. As we have hitherto defined and discussed the let-alone principle, it means only that governments ought not to interfere with the freedom of each individual to employ his own faculties in his own way, and to engage in such enterprises as he may choose, so long as he does not interfere with the equal rights of others. It does not deny to governments the same right as the individual to enter into business enterprises, subject to the same restrictions as individuals. But it is often extended so as to include the doctrine that the functions of society should be absolutely confined to the protection of the citizen against wrong, and that government should not engage in any business enterprise whatever, not even in establishing post-offices and carrying the mails.

It is essential that the student of the subject should clearly understand the difference between this proposition and that of *laissez-faire*. The one claims that the government should not stop the citizen from acting; the other that it should not act itself. For the sake of clearness we shall call the latter the *keep-out* principle, because it requires that government should keep out of certain fields of action.

Illustrations. When government undertakes to carry letters, it violates the keep-out principle. But it does not violate the let-alone principle so long as the business pays for itself and no additional tax is necessary to carry it on. When the law prohibits any one else from carrying letters, then it violates the let-alone principle.

When a government issues notes to circulate as money, it violates the keep-out principle. When it requires that creditors shall accept these notes as if they were gold and silver, it violates the let-alone principle.

The establishment and support of public schools is a violation of the keep-out principle. It is also a violation of the other principle to this extent: that the money to support the schools must be raised by taxing every individual, whether he wants the school or not.

Although in the abstract all taxes are a violation of the let-alone principle, yet, if we are to adhere to this principle as closely as we can, taxation should be levied only for the needs of government. Hence when taxes are levied merely to keep people from buying particular things, or to favor one person at the expense of another, the principle is still further violated.

The same principle is violated when the law refuses to enforce any contracts into which individuals have freely entered for their own mutual benefit, and which works no injury to third parties. The case is the same when the law construes contracts differently from what the parties intended; for example, when it admits that a debt which the parties agreed should be paid in gold may be discharged by a payment in silver or paper. But it is no violation to define beforehand what shall be considered a dollar, to say that it shall mean a certain coin or a certain piece of paper, provided always that the definition is applied only to cases in which the parties understood that this was to be the meaning.

It is no violation of the let-alone principle for government to compete with individuals in any branch of trade or industry, so long as it does so without loss to itself, and hence without increase of taxation. But any such action is of course a direct violation of the keep-out principle.

8. *Relative Applications of the two Principles.* The let-alone principle is valuable as an expression of that line of policy which has made modern society what it is. But the keep-out principle does not rest on any such basis. We cannot decide *a priori* what governments should or should not do. We should rather say that government should undertake any business which it can undertake with advantage to the public and without doing injustice to individuals. It has been more than once questioned whether the post-office department should open the mails to anything but such mediums of information as letters and newspapers. Some maintain that it is no part of the business of that department to act as a general carrier,

and that such service should be left to express companies. They would exclude little parcels of every kind from the mails on this abstract ground alone, without even inquiring whether the service could be performed with advantage both to the government and the public. Thus a great convenience to people living in remote regions would have been denied them on a mere abstraction. The correct ground to be taken was this: Government has undertaken to send conveyances with letters and papers to every part of the country, itself assuming the risk of its paying. If the additional cost of carrying miscellaneous parcels in the same conveyances is compensated by the additional revenues thus derived, then the work ought to be undertaken; but not in the opposite case.

A comprehensive view of the situation will show that there are some services which are not performed in the best manner when left entirely to private enterprise, because some of the conditions which insure good performance are wanting. This is notably the case with bank-notes, railways, and telegraphs.

Bank-notes. We have described the evils suffered by leaving banks free to issue notes at their own pleasure. This state of things was remedied only by governmental interference. Government first issued notes itself, prescribed conditions on which banks should issue notes, and prohibited the issue of any others.

Railways. On the let-alone and keep-out principles a railway will be built to a place by some company whenever the benefit will pay for the outlay. But as a matter of fact the benefit done by the road is always greater than the amount it can collect for its services, because it cannot charge each separate man what it pleases, but must treat all alike. Again, were the principles of universal application, then, if the road did not serve the public as well and as cheaply as it could, other capitalists would compete with additional roads. This is not always the case. The possible projectors of a second road would see that freights would be lowered and the lessened profits divided between the old and new roads. Hence, although the first road

might make inordinate profits, it would not follow that a second would pay. If the second is the last built, the two may combine to keep up freights, and the public will then find itself paying profits on two roads where only one is necessary.

Telegraphs. The history of telegraph companies in this country affords an instructive example of how competition may be prevented and an artificial monopoly retained through an entire generation. The leading company long managed to keep the price of messages above the natural limit, by buying up or joining hands with every formidable competing company. The process has been a most wasteful one, because the leader has to use the excess of profits which it derived from the public in these purchases, thus making the public pay for all these companies. In consequence of the liability to this state of things it has become common for governments to take the management of railways and telegraphs into their own hands. This is especially the case with telegraphs, which are managed in connection with the post-office by all the leading governments of Europe, and that with great advantage to the public.

9. The strongest objection which has been urged against the Government of the United States undertaking to benefit its people in the same way is the supposed lack of wisdom with which it will manage any such business. It has become the custom for Congress to attend almost exclusively to special "interests" in shaping its policy, thus losing sight of the general public welfare. That is, if any legislation is proposed on such a subject as the tariff, the encouragement of industries, or the management of the telegraph, Congress does not investigate the subject itself with general reference to the public welfare, but invites all who are interested to present their views. Its policy is then determined by the views thus obtained.

This method is a very bad one, because the only views that can be presented are those of a few interested parties, and the

more these parties can gain at the expense of the public the better they can afford to urge such a course as shall be to their advantage.

ILLUSTRATIONS.

The reader who has carefully weighed the preceding discussion will perceive that the main objections to government regulating the activity of the individual are founded on purely practical considerations and not on abstract principles. The reason why wise men are opposed to such regulations is that under present conditions it is scarcely possible to have them wisely directed to the public good, but very easy to have them employed for the public injury. An illustration of each of these possibilities will be pertinent.

1. If a wise and intelligent man were called upon to devise a single measure of government interference which should be of the greatest benefit to the public health and happiness, and which would be at the same time simple and easy, he would probably decide upon the suppression of all quack medicines. The public spend many million dollars annually in proprietary pills, bitters, cordials, oils, and other nostrums. Of many of these compositions, spirituous liquors of the worst kind are the principal ingredients. They injure the public health and foster the taste for alcohol, opium, and other injurious products. What is yet more to the point, it cannot be claimed for them, as it can for alcoholic and vinous drinks, that they are sometimes of use and that they gratify an appetite. It cannot be said that quack medicines are useful in any definable case, and their sole basis is a fraudulent pretense that they can cure disease. Yet no one has ever proposed their suppression by law, and we may feel fairly confident that they are one of the last things which a government charged with the task of regulating the activity of the citizen would think of interfering with.

2. Now take a case of the opposite kind. A few years ago it was discovered that a fatty product known as oleomargarine could be manufactured on a large scale at a small cost, and could be used as a substitute for butter. No evidence has ever been adduced that it is not as wholesome and nutritious as butter. So far as chemical research has shown, it is the equivalent of butter in all its relations to the human system. Had any State legislature consulted the best chemists within reach, they would have learned that the manufacture of this product was as legitimate as that of another. Yet so strong is the popular prejudice against it, that laws have been enacted the effect of which is to discourage the manufacture; and we can hardly doubt that were our legislators clothed by public opinion with the right to direct the activities of the individual, one of their first acts would be the suppression of this perfectly harmless manufacture. Indeed an attempt to do this was actually made by the legislature of New York, and was frustrated only by a judicial decision that the law was unconstitutional.

We may conclude from this review that if legislators really represented the wisdom of the nation on every subject, they might be given much more power over the individual. But so far as we have yet advanced, if we leave out the cases in which the good and evil are so patent to everybody that none can be deceived, we may foresee that the only effect of such power would be to block the wheels of progress, and to make provisions for benefiting the powerful few whose views could be heard by the legislature at the expense of the masses whose interests cannot be felt.

2. To illustrate the difficulty described in § 9, let us suppose a company to find that if Congress can be induced to adopt a certain policy, which we shall call policy A, it can collect an extra profit of one cent per annum out of each inhabitant of the country. Not one person out of a thousand would give a moment's attention to the wrong, or indeed ever find it out. Even if he found it out, it would not pay him to protest against the policy merely to save himself from a loss of one cent a year for each member of his family. He could not send a letter, or print a handbill, or call a meeting of his neighbors without spending more time than the question was worth.

Very different would it be with the other side. One cent per year out of each inhabitant would make an annual income of $500,000. By expending a fraction of this profit the proposers of policy A could make the country resound with appeals in their favor. At an annual expense of $20,000 two or three new books could be published every year showing the necessity or advantage of policy A, and a copy of each book could be sent to every member of Congress. Another expenditure of the same amount would suffice for the payment of several lecturers on the subject, and the call of many enthusiastic public meetings to send petitions to Congress. A third instalment would provide a body of able lawyers to plead with individual members of Congress. A fourth would secure a long series of editorial articles, in various newspapers, all favoring policy A, and calling upon the people not to vote for any man who opposed it. Thus year after year every man in public life would hear what would seem to be the unanimous voice of public opinion on the side opposed to the public interests.

4. Has the practice of the let-alone policy any appreciable influence upon the development of men? That is to say, let there be two countries, similarly situated in all respects, in one of which the government looks carefully after the citizen, prescribing his going out and coming in, and preventing his engaging in any enterprise which the government does not consider beneficial; while in the other the government lets him have his own way and suffer the consequences of any unwise acts he may perform. What difference in the character of the men would you expect to arise in the course of generations? Is there anything in the policy of England and America and the character of the Anglo-Saxon race by which you can illustrate your conclusions?

5. Herbert Spencer, in his *Social Statics*, claims that if the coining of money and the carrying of the mails had been left entirely in private hands, the work would have been done as much to the public satisfaction as it now is, if not more so. Discuss the subject from the point of view of American experience with railways, express companies, and telegraph companies.

6. Mr. Henry C. Carey regarded it an objection to the practice of trade that traders always bought goods where they were cheapest and sold them where they were dearest. Discuss the advantage of this system from a philanthropic point of view. What would be the effect upon the prosperity of the world if traders should adopt a different policy?

7. When men are left to themselves they always purchase goods where they can get them the cheapest. By so doing do they command the goods with the minimum of labor to themselves? Can you imagine a state of things such that a man should buy cloth from some other than the cheapest seller and yet that the cloth should cost him less labor by his adopting that course? If so, state whether these circumstances are such as can ordinarily exist in society.

8. Is the question of a prohibitory liquor-law an economic one? How is it with the question of a protective tariff? Of laws against demoralizing publications? If, in considering the question proposed in 4, you should conclude that individual liberty favored a vigorous development, would you set any limits to the proposition? For example, do you consider that the liberty on the part of publishers to issue dime-novels for boys to read is of a kind which favors development?

CHAPTER II.

THE POLICY OF A PROTECTIVE TARIFF.

10. All nations levy taxes to a greater or less extent upon goods imported from foreign countries. Such taxes are commonly called *customs duties*, or simply *duties*. A scale or system of duties is called a *tariff*. A tariff has two distinct economic objects:

Firstly. The raising of revenue.

Secondly. A real or supposed advantage to the country in "protecting" its producers against outside competition.

The policy of levying no tax on imported goods, except for revenue, is called *free trade*. That of levying taxes to "promote home industry" is called *protection*, or the *protective policy*.

One of the great economic questions of the day is whether a protective tariff is, under any circumstances, of real advantage to a country, and hence whether the policy of levying it should or should not be upheld. This question may be considered from two points of view, namely:

I. That of the let-alone principle in general.

II. That of the special question of public policy.

From the point of view of a partisan of the let-alone policy as a general principle of action, there is no occasion for prolonged discussion. All taxes levied for the purpose of protection interfere with the freedom of the individual to secure his goods on the terms most advantageous to himself, and hence are violations of the let-alone principle. If, therefore, all men admitted this principle, there would be no occasion for discussing the policy of protection. Since they do not all admit it, we shall not consider it at all, but shall consider the policy of protection solely as a practical one touching the public good.

Moreover, since it is difficult for one country to frame a policy having in view the special benefit of other countries, we shall take account only of the interests of the country which levies the tariff. The question will then be whether we can really promote our own interests by discouraging the importation of foreign goods through the instrumentality of a tariff, and not whether humanity at large is benefited. This is the question on which free-traders and protectionists join issue.

We have already condemned all universal theories of government the supporters of which would apply them without regard to circumstances. Now, if by a protectionist we understand one who contends for the highest possible duties on all importations, without regard to the requirements or necessities of the situation, we must admit that the protectionist takes untenable ground. As a matter of fact, all protectionists do not take such sweeping ground as this. The general position taken by them, and the only one worth considering, is that as a general rule we can promote our interests by a protective tariff judiciously adapted to our situation. The corresponding position of the free-trader is that, as a general rule, our interests are promoted by free trade.

Viewing the subject from this standpoint, we see that if we break away from the let-alone principle, we restrict our discussion too much in confining it to the consideration of high tariffs to protect ourselves against foreign competition. If government is going to use its authority over foreign trade for the purpose of promoting the interests of its citizens, it ought to have full liberty of doing so in the best way, whether by a high tariff or a low one. Thus, placing on the free list an article from which we might collect a duty, because we think we are thus benefiting manufacturers who use that article in their industry, would be a violation of the let-alone principle. For we must then levy a higher duty on other articles, and give that which is free a special advantage. Again, export as well as import duties might promote the public good, and we might even go so far as to specially encourage the importation of

certain kinds of goods by bounties, in order to discourage home manufactures, if by so doing our interests would be promoted.

11. Looking at the subject from this broad point of view, and throwing off all our prejudices for or against active efforts on the part of government to promote our general welfare, it must be admitted that many cases may arise in which it would seem possible to promote the interests of ourselves and our posterity by modifying the natural course of trade. The following are examples:

If it is found that the supply of iron, coal, and copper in our mines is getting exhausted at a rate that, if continued, would result in our posterity being entirely without these materials, it would be sound policy to levy a tax upon the extraction of those materials and to admit the foreign product free. Although this would be an algebraically negative tariff, it would in the proper sense of the term be protective, if we apply this term to any tariff designed to promote our good.

If any manufacture is injurious to the public health, selfishness would dictate our adopting such a course as would discourage its prosecution by our own people.

If the promotion of some form of industry or labor by a protective tariff is proved to be a valuable means of education to the people, that fact would afford a sound reason in favor of it.

The policy of permitting the free importation of any product the home supply of which is monopolized by one or more parties capable of combining to keep up the price is too obvious to need enforcement.

But it must never be forgotten that none of these cases can be proved by merely vague and general argument, but that each must rest on its own grounds. Such general statements as, "Home industry may be improved by a protective tariff," "The ultimate cost of a product may be diminished by encouraging home competition," are entirely inconclusive and value-

less except as set-offs against the corresponding general arguments in favor of free trade. For example, to show that some particular commodity, such as silk, should be protected, it would have to be shown not only that things in general might be got in a cheaper way by encouraging the home product, but that the special product silk would be thus cheapened.

12. The general argument for free trade is so simple as not to require much elaboration. It is in fact nothing more than an application to the case of foreign trade of the reasons already adduced in favor of the let-alone principle. It is supposed that, in ordinary cases and as a general rule, industrial activity takes the most advantageous form when each individual is left free to promote his own interests in his own way, subject to the requirement that he shall not encroach upon the corresponding freedom of his fellow-man. The money paid for goods by the purchaser is a measure of the labor expended by the purchaser in earning the money, and hence in commanding the goods. If they cost less when imported from abroad than when bought from his neighbor, that very fact shows that, so far as he is concerned, he gets them with less labor to himself than if they were made at home. The difference between home manufacture and importation is simply this: that in the one case we make the goods we want ourselves, and in the other case we make other things to give foreigners in exchange for the goods we want. If it is easier and cheaper to us to make the things which we give in exchange than to make the goods, then it is to our economic advantage to import them rather than to make them.

We have in the beginning mentioned, what is indeed an obvious fact, that men, when left to themselves, try to supply their wants with the least possible amount of labor. The free-trader assumes that, in doing this, men are actuated by sound common-sense. But the protectionist takes the ground that there are other and more intricate questions to be considered than the merely economic one of labor. If, in conformity to

this view of the protectionist, we reject the free-trade argument, then we have to consider what reasons can be assigned in favor of a protective tariff. The reasons which one meets are so numerous that they cannot all be considered in detail; indeed, the course most advantageous to the student will be to examine them for himself and reach his own conclusions. We shall therefore do little more than state and analyze the principal reasons in such a way as to guide his thought on the subject.

13. First Argument for Protection: *The Home-industry Argument.* The following is the form of the argument as usually stated:

It is important that our commercial and manufacturing interests should be protected and industry promoted. By levying a tariff upon the importation of all products that can be made at home we encourage their manufacture at home; by a tariff on iron we cause furnaces for the production of iron to be built, and men to be employed in working them; levying duties on cotton goods causes cotton-mills to be built, and men to be employed in making cotton; a tariff on glass gives rise to glass-works, and encourages glass-making; and so on indefinitely. On the other hand, were free trade permitted, there would be an influx of cheap goods from abroad which would result in a great diminution in the number of our mills, furnaces, and factories, and would be productive of a great diminution in the amount of industry devoted to the manufacture and sale of iron, clothing, and other products of industry which could be imported from abroad.

As in all questions of policy, two logical steps come into play in this argument—the one of cause and effect, the other of policy. It concludes, first, that, as a matter of mere cause and effect, the cutting off of the foreign supply of goods promotes home industry. Secondly, it assumes that industry is a good thing and therefore ought to be promoted. It is very important that the student should make up his mind on these

two conclusions separately and not confound them together. The first can be treated by strictly scientific methods in such a way that no doubt can exist in the minds of reasonable men. The second is one of those questions of policy which every person must decide for himself by the aid of his own common-sense.

Beginning with the first conclusion, it is too obvious to need proof that levying duties on goods which, were trade free, would be imported must tend not only to increase the home manufacture of those particular goods, but the home production of everything necessary to make the goods. This is, indeed, nothing more than saying that when we throw difficulties in the way of a man doing something which he wants done, he will exert himself to overcome the difficulties, or to reach his end by some other means. Cutting off his legs will encourage him to make wooden legs; depriving him of machinery will lead him to make more and better use of his hands; and so on indefinitely. The tariff does not make it any easier to manufacture our own goods. It only makes it more necessary by compelling us either to manufacture them or to go without them.

But it would be a mistake to suppose that this increase in any particular production necessarily indicates an equal increase in the sum total of industry. Whatever capital and labor are thus devoted to one form of industry will, to a greater or less extent, be withdrawn from other employments. In the present case we can see exactly how this withdrawal is effected, and how the compensation is established. No foreigners are going to bring us their goods, or allow us to buy them, unless we give them an equivalent of our productions in exchange. *Vice versa*, we are not going to make goods for them unless we can get theirs in return. No matter how free trade may be between us and the Esquimaux, we will not ship them any goods. We cannot under any circumstances import foreign goods without exporting an equivalent of our own products. Hence whenever we diminish importations by a protective tariff, we must at the same time diminish the production of

those goods which, were trade free, we should give in exchange for the goods imported. Thus the compensation is effected by withdrawing labor and capital from the manufacture of goods for export, and devoting it to the production of goods for home use.

It would, however, be a mistake in the other direction to say that all the industry set in operation by the tariff is withdrawn from other employments, and that there is no increase whatever. The very fact that, under free trade, goods are imported instead of being made at home shows that we find it easier to make the goods which we send abroad than to make those which we receive in exchange for them. Hence when we are forced to make them ourselves, there must be an increase in the sum total of our industry. Thus the first conclusion of the protectionist is shown to be true to a limited extent.

We have now to consider the second principle, which is that increase of industry is, in itself, a good thing. This principle is really at the basis of the argument, because if industry is not a good thing in itself, why should we take so much trouble to promote it?

Few social subjects are of more interest to the philosophical student than the views and practices of men on this point. No opinion is deeper-seated in the ordinary mind than that other people should be encouraged to labor, and that when they are hard at work the interests of society are promoted. This opinion gathers tenfold strength when the work is of a kind which strikes the senses. It is hardly possible for any person to visit a great foundry, listen to the clank of the machinery, see the flames light up the evening sky, and watch the forms of a hundred workmen in active motion, without being impressed with the belief that he sees before him an activity of great national importance. If he were asked how the labor of five hundred washerwomen in the country compared in importance with that of the foundry employing a hundred men and making a noise which could be heard miles away, it would strike him as very odd that the work of five quiet women should be

compared with that of one man working a great steam-hammer. It is perfectly certain that the washerwomen do not receive as much attention at the hands of the public as the iron-founders. Whether the importance of the two classes to public comfort and happiness is proportional to the attention they receive is an instructive question for the student to think over.

14. On this question of the desirableness of industry in itself the free-trader and the protectionist come squarely at issue. The former, if he is going to take any tenable ground, must take the ground that industry in itself is a positive evil, or, to speak more accurately, that an increased necessity of employing it in any particular direction is a drawback to human enjoyment. The protectionist, if he is logical, and if he accepts his own argument, must join issue and claim that industry in itself is a good. To decide the point it is necessary to make abstraction of everything but the industry, and inquire whether industrial activity is a good in itself. For example, if a man were to do work in a foundry, and all the hammering, melting, burning, and labor went on without any iron being produced, or if these processes were all performed over and over again on the same iron, we should still have all the industry. Whatever benefits and advantages would then inhere in the foundry must be considered as so much in favor of pure industry. The men would have the benefit of the exercise, and the managers would gain experience in organization.

In this particular comparison the iron produced must be left out of consideration, because we get that under either system. The claim of the protectionist is, not that we should get no iron under free trade, for we would get rather more than we would make, but that we should get it without any hammering, burning, digging, or other forms of labor. The question whether it is better to get it with or without these operations must depend on whether the operations are in themselves a good. If iron *plus* industry is better than iron *without* industry, it can

only be because industry without iron is a good thing. This is a point on which the student must make up his mind for himself.

15. SECOND ARGUMENT FOR PROTECTION. *Our labor cannot compete with the low-priced labor of Europe without the wages of our operatives being depressed to nearly the scale which prevails abroad. Since there cannot be two prices for the same commodity where free competition is allowed, the rate of wages in countries between which trade is free cannot differ by more than the cost of exchange and transportation. We may therefore lay it down as a general law that whenever free trade is permitted between two countries in which the scale of wages is decidedly different, the resulting competition will tend to the disadvantage of laborers in the country where the wages are the highest.*

At first sight this argument might seem identical with the former one. The difference is this: in the first argument we are concerned only with industry and not with the rate of wages. *Wages* are different from *industry* in the abstract. Very low wages might promote industry by compelling men to labor more in order to make a living.

One fallacy of this argument lies in its not taking account of the very different circumstances of different countries. To those who will not accept any proofs except of fact, the fact that in England, which is the typical free-trade country of the world, wages have long been much higher than in the neighboring countries of Europe where protective tariffs are in vogue, ought to be a sufficient proof. But the use of this particular method of proof is quite beneath the economist, for the simple reason that it proves nothing except that free competition does not necessarily depress wages in the country where they are highest. There may be great numbers of causes for this difference besides free trade, so that we are not justified in attributing it to the latter. The only satisfactory proof of the fallacy is shown by the reason of the thing. We have shown in Book

IV., Chapter VIII., that no cheapening of products can lessen the sum total of the demand for labor in the country, because the money saved on any product goes into the market for the purchase of labor on some other product. Thus the only effect which can be produced by free trade is an increase of wages for one class of laborers, with a corresponding diminution for another class. Should we introduce free trade, and, in consequence, should there be an importation of x dollars' worth of goods which we had been making for ourselves, there would be a falling off of x in the demand for labor to make these goods. But there would be an increased demand y for labor to make the goods we should have to give in exchange. If y were less than x, the people who had been paying x dollars would save the difference, and have it to spend for labor of some other kind. The two demands y and $x-y$ would exactly compensate the loss x. The equilibrium is restored by a gradual change in the direction of labor from the production of x dollars' worth of goods of one kind to x dollars' worth of some other kind. Such a change, as we have already shown, can nearly always be made faster than any change in the demand.

To the cry, "We cannot compete with the pauper labor of Europe," the answer is, Why do you want to compete? And this brings us to the question, Why are wages higher here than in Europe? The answer is, Because we have a larger and more profitable field for labor in developing the resources of our country. Erecting houses, building railways, cutting down the forests, digging ore from our mines, and raising wheat from our prairies afford a more remunerative employment for labor than can be obtained in densely populated countries where the railways are already built and the fields of wheat are limited. Our laborer compares with him of Europe in a small degree as the successful lawyer does with the bootblack. The lawyer cannot compete with the bootblack in the art of the latter. Does he therefore desire the price of blacking boots to be raised lest his professional income shall be reduced? Not at all. He

simply does not compete, but employs himself more profitably in other directions.

16. To look at the matter from a different point of view, let us consider the case of some great glass-factory. Here we have a great industry employing, we may suppose, a thousand men and a large amount of capital, consisting of buildings, furnaces, and raw materials. Under free trade this factory would perhaps never have existed, and if free trade were permited it would perhaps have to stop. Now what does all this mean? It means that one thousand men who, had there been no protective tariff, would have been at work building railways, erecting houses, digging in the silver-mines, raising wool, or rearing cattle, have been turned from these employments into building chimneys and making glass. Instead of making things to give foreigners in exchange for glass they are making the glass itself. Now, the question whether this change is advantageous depends very largely upon whether we are to assign any special value to the work of making glass rather than to the other work which we have described. By fostering the glass industry we have diversified employment. But is this diversity of any general advantage? Is the country any better off because a thousand men spend their lives in inhaling noxious fumes from furnaces rather than working in the open air? These are questions for every one to consider for himself.

17. Another consideration which may be adduced is that of the possible amount of foreign competition were all restrictions removed. Mr. Edward Atkinson* estimates the value of the total products of industry in the United States during the year 1884 at $10,000,000,000. During the same year the total value of imported merchandise was $668,000,000, or less than seven per cent of our home production. Were the tariff abolished, it is hardly possible that our imports could be doubled; indeed it

* *The Distribution of Products*, p. 81.

would take a long time to build the ships necessary to bring in the double quantity. It is therefore hardly possible that 7 per cent more of our labor would meet with foreign competition. And, if it did, we should have to produce $700,000,000 more of goods to export in payment. We should also have to build railways and rolling-stock to transport the goods to the sea-coast, and bring back those received in exchange. Thus, altogether, even the small percentage in which the competition was felt would be balanced by new demands incident to the change.

18. *A Protective Policy Mutual and Reciprocal.* To completely understand the workings of a protective tariff it is necessary to see that it is reciprocal in its action; that is to say, if a country A wishes to protect its industries against the competition of a country B, that protection can be secured by the action of B as well as by that of A itself. The reason of this is that trade is mutual, and will not go on unless each country receives an equivalent for what it exports. A stream of values is constantly flowing in each direction, and the two streams being equal, an obstruction produces the same effect whether at one point of the stream or another. One example of this is seen in the effect of an export duty.

Suppose that the English nation should require all cotton goods exported to America to pay a tax of 50 per cent, while no duty was levied by America. It would make no difference either to the exporter of the cotton from Liverpool or its importer in New York whether this tax was paid on sailing from Liverpool or on arriving in New York. Hence the price in New York would be affected in the same way, and the stimulus to our own industry would be the same as if the duty of 50 per cent had been levied by America. The only difference would be that it would be the British Government and not our own which would collect the revenue. But this would make no difference to the cotton-manufacturers of our country.

Again, suppose that all foreign countries should unite in lay-

ing a heavy duty upon our wheat, cotton, and other exports; this would diminish all our exports, and would therefore discourage the production of wheat and cotton in our own country. It would also prevent our importing so many manufactured goods from abroad, and would thus in two ways cause our industry to forsake the production of wheat and cotton and to engage in the manufacture of those things which, had foreign countries not levied the tariff, would have been imported from abroad. Thus the general effect in stimulating and diversifying industry would be the same whether we or foreigners levied the tariff (cf. III. 70).

Still there would be important differences in detail, depending upon the magnitude of the tariff: if it were not sufficient to stop all trade, then foreign governments would get the benefit of the revenue and we would get none. Moreover, such a foreign tariff on our exports would not encourage any special industry among us, but only industries in general. That is to say, we could not say that it would encourage the iron industry or the cotton industry separately, but would, so to speak, encourage equally the production of everything which, under free trade, we would import from abroad. On the other hand, a domestic tariff can be so adjusted as to protect any particular industry, the silk-manufacture for example, and to leave any or all others unprotected. Our own tendency is, however, to protect all our manufactures equally; and this can be effected by the foreigners levying their tariff on our goods as well as by we levying our own tariff on theirs. Moreover, the effects of the two tariffs become identical as they approach the prohibitory limit. If all foreign governments should levy such tariffs as to actually prevent the export of American products, all trade in both directions would be stopped, and the effects would be the same as if we should levy a prohibitory tariff upon all foreign products whatever.

ILLUSTRATIONS AND EXERCISES.

1. Bastiat, a popular French economist, published a burlesque on the arguments for protection by preparing an imaginary petition addressed to the Chamber of Deputies by the manufacturers of everything necessary to the production of *light*. This petition showed the great benefit which would arise to French industry if a law were enacted requiring that the sunlight should be rigorously excluded from all dwellings. The supposed petitioners traced out the effects of this policy upon industry in some such form as the following:

I. There would arise a greatly increased demand for all products of industry necessary to the production of light, including tallow, oil, lamps, and chandeliers. As a result of this demand the industry of all persons engaged in the production of these commodities would be stimulated to activity, and the prevailing depression and distress among them would be immediately cured.

II. This activity would be transmitted to other industries. The demand for tallow would cause an increased demand for oxen and sheep. Thus more of these animals would be reared, and we should have a great increase in the production of artificial meadows, of wool and of hides, so that the whole farming population, including both land-owners and laborers, would find an increased demand for the products of their industry.

III. The increased demand for oil would result in an expansion of the whale-fisheries; more ships would be demanded, and thus employment would be given to more ship-builders. The latter, in their turn, would be able to buy more food and clothing.

IV. As a result of the increased demand for lamps and chandeliers, all workers in brass would be immediately benefited by the increased demand for their industry. Their augmented income would enable them also to purchase more food and clothing. The increased demand for food and clothing would benefit all producers of food and all makers of clothing. Thus, step by step, the industry of all classes and of the whole nation would be stimulated to renewed activity, and an era of prosperity such as had never before been known would bless the whole land.

Now, what is right and what is wrong in the conclusions of this petition? Were the supposed petitioners right or wrong in claiming that the policy which they advocated would result in a greatly increased demand for labor and in a great increase in the national industry? Is it or is it not true that the production of tallow, oil, and chandeliers would be stimulated, and that the stimulus would extend to laborers of every class? If they were right, what reason can you assign why their petition should not be granted? Suppose that by a little ingenuity an artificial light could be produced which would be as good and as pleasant to the eyes as daylight: what reason can

you assign against its employment in lieu of permitting the free introduction of daylight?

2. Now view the opposite picture of an apparent evil. Suppose a tree discovered in foreign parts, resembling the cotton-plant, but suddenly brought to such perfection that completely made fashionable garments of any cut the planter might desire could be made to grow on the plant; and this with such ease and in such quantities that one fourth the laborers now engaged in cotton cultivation could produce clothing for the whole country at a merely nominal cost.

Note the consequences. All the tailors of the country would be immediately thrown out of employment. All the stores of cloth and clothing piled up in our warehouses would immediately become almost valueless. The value of all our factories would be as completely destroyed as if a devouring angel had swept over the land. Capital worth thousands of millions would vanish in a night. Nearly all the clothiers in the land would become bankrupts, millions of operatives would be thrown out of employment, and a commercial crisis such as has never yet been known would supervene.

Would all this on the whole be an evil or a benefit? From the standpoint of common-sense could it be an evil that everybody should be well clothed without labor and without price? How would the compensation be effected, and what would be the ultimate effect of the new clothes-bearing plant upon the interests of the country? As a matter of policy ought Congress to prohibit the introduction and cultivation of such a tree?

3. Consider the following argument and counter-argument for protection:

Argument. The principal effect of the protective tariff is to benefit the farmer by securing for him a home market for the products of his farm. The policy in question leads to the establishment of manufactories in his immediate neighborhood, thus bringing the consumer of wheat to his own door as it were. The cost of transporting wheat to a foreign country, and of bringing back the products of that country to the farmer for his own use, is thus saved. The manufacturer and his workman, in consequence of the stimulus to their industry given by the tariff, are better able to purchase the farmer's wheat, while the farmer himself has fewer competitors to engage in the work of raising wheat. Thus the agricultural class is that most benefited.

Counter-argument. No home market can be created by the tariff for the simple reason that the demand for food depends principally upon the number of people to be fed and the population within reach of the farmers. The demand for food is not increased by the tariff; all classes of laborers can purchase all the food needed for their subsistence at lower rates of wages than they now receive. They will not purchase more than this under any circumstances. Hence, so far as mere selling is concerned, the farmer has the same market in either case. But under free trade he can

purchase everything he wants at a cheaper rate than he can if his foreign sources of supply are cut off by the tariff.

From the best data you have at hand compare the cost of transporting a cart-load of wheat to a factory ten miles away by horse-power and the cost of transporting the same wheat from Chicago to Liverpool by railway and steamship. Compare also the cost of sending a pair of boots from one end of New York City to the other by a messenger-boy, and the cost of transporting the same boots across the Atlantic. From these comparisons frame a definition of the term "distance from market" in an economic sense. Consider also how far it is true that the farmer in Illinois must pay all the transportation both ways if he trades with a foreign country, and how far it would be true to say that the foreigner who eats his wheat and returns the goods must pay the transportation in both directions. Can we throw the cost upon the one more than upon the other?

4. Why do the English desire free trade with America? Is it that they may find a way of getting their own goods consumed by us, or that they may get the wheat and corn of our prairies to feed their own people with?

5. Trace out the points of resemblance and difference between the arguments for protection and the arguments against labor-saving machinery. So far as our own interests are concerned, is there any essential difference between the effects of our markets being flooded with cheap goods, produced by a foreign pauper working efficiently for almost nothing, and by the products of a machine working for nothing but the labor of attention?

6. We feel very much pleased when a foreign market is opened for our goods, but after they are sold we esteem it a favor if we freely admit the goods the foreigners give in exchange. When we find, by statistically summing up our exports and imports, that we have sent abroad goods of far greater value than we have received in exchange, we say that the balance of trade is in our favor. Is this way of looking at the matter in accordance with logic and common-sense? If so, just how far would you carry the principle? If it should be found that we had exported goods to the amount of one hundred million dollars and only received ten millions' worth from abroad, would this show a desirable state of things? Is it any use to open up a new market if we get nothing in exchange? Are we better off the more we get in exchange or the less we get in exchange? If the former, is it logical to try to diminish the amount of imports by protective duties? If the latter, what sort of people should we select to bestow our goods upon?

7. At the present time hardly any fine white sugar is made in England; the English consumers are supplied almost entirely from France. This is because the French Government gives what virtually amounts to a bounty on all the sugar which goes from France; thus enabling French sugar-refiners to undersell their competitors. (Mrs. FAWCETT'S *Political Economy*.)

Is it to the advantage or disadvantage of the British nation that the French give this bounty to their sugar-manufacturers? Which view soever you take, carry it out to its logical consequences on the largest scale. Consider especially a nation which we may call X surrounded by neighbors who are bent on encouraging their own industry to the highest extent at the expense of that of X. Whatever industry X engages in, some surrounding nation offers to its own producers in that industry such a premium that they can produce and sell the product to the people of X cheaper than these people can make it themselves, and thus the manufacturers of X are kept at a relative disadvantage. Suppose a combined attempt were made by the neighbors to continue this policy to an unlimited extent: would the effect upon the people of X be beneficial or injurious? State how far this policy could be carried, and what its ultimate outcome would be.

8. Analyze the following arguments for protection, and show whether such a result is probable:

If free trade were permitted, and if foreign manufacturers found our home manufacturers producing anything which the foreigners could produce with equal advantage, they would first flood our markets with the articles in such quantities as to entirely stop the American production. The Americans having disbanded all their laborers engaged in the manufactories and suffered the machinery to go into decay, the foreigners would put the price up until it was higher than it ever was before, and would so keep it until the American manufacturers again went to work. Then they would, by lowering the price, again repeat the process of destruction, and so on indefinitely; thus subjecting the price and supply in our country to enormous fluctuations, and causing our manufacturers to waste time and capital in starting enterprises which were to be immediately rendered worthless.

If we call the home manufacturers A, B, C, etc., and the foreign manufacturers X, Y, Z, etc., then under a prohibitory tariff competition will be confined to A, B, C, etc., while under free trade X, Y, Z, etc., will compete with each other and with A, B, C, etc., also. Under what circumstances, if any, is it possible, by thus widening the range of competition, to make prices more unsteady? The result will be different according as the home or foreign product is more or less monopolized. Consider as an extreme case that in which there is but one home manufacturer, A, and but one foreign manufacturer, X, each of whom has a complete manufactory.

Consider also whether the following reversal of the reasoning is as sound as the other: If the foreign manufacturer should try the policy pointed out, the result would be that America would supply itself at a very cheap rate with a large quantity of the goods, while the American manufacturer, though temporarily ceasing his production, would employ his time in getting ready to re commence at the first favorable moment. His men would temporarily find other employments. When the foreigner attempted to

raise the prices, he would find no American buyers until the stock he had formerly sold was nearly used up. Then the American producer, finding the market favorable, would start work again, thus compelling the foreigner to again lower his prices. The result would be that the foreigner would be compelled to sell to us below cost and there would be no fluctuations whatever.

9. In the New York *Tribune* Mr. Horace Greeley once illustrated the danger of free trade by picturing an imaginary island the inhabitants of which supplied all their own wants by their own industry. But the island was discovered by a nation of traders, who forthwith sent cargoes of goods to it and offered to the inhabitants everything that they wanted at a cheaper rate than they could produce it themselves. The result was that all industry on the island ceased and universal ruin overwhelmed the inhabitants.

Supposing the inhabitants to be men of sense, were they the happiest or the most miserable of beings?

10. Under the Constitution of the United States no State can levy duties upon imports. The result is that no State can protect its industry against the unrestricted competition of that of other States, and thus we have a more extended system of absolute free trade on the American continent than in any other similar region of the world. Consider whether this is to the advantage or to the disadvantage of the less developed States. Take up the questions involved in the following order:

I. In the State of Ohio no great factory for the production of fine cotton goods has arisen or can arise owing to the superior facilities of New England in that branch of industry.

II. Is it not, then, to the detriment of the people of Ohio that they cannot protect themselves against this competition? If not, why not? Does the fact that the competition comes from fellow-countrymen change its effect? Can it be a good thing to have the manufactures of Ohio crippled by citizens of Massachusetts, but a bad thing to have the same thing done by foreigners? If so, show in what the good consists in the one case, and in what the bad consists in the other case. Suppose the New England States to be separated from the Union: would their competition then become more injurious to the other States than it is now? Suppose the Constitution to be so amended that each State could protect its industry against the competition of other States of the Union: do you think a protectionist party would arise in each State demanding such protection? Could they or could they not logically apply the arguments for protection to the case?

In fine, if a free-trader should argue thus:

That which is an evil when inflicted by one agency cannot become a good merely by being inflicted by some other agency. If, then, it is an evil that the cotton-manufacture of Ohio should be kept down by foreign competition, it must also be an evil to allow its suppression by Massachusetts

competition, and the constitutional inhibition in question is injurious to those new States which would build up their manufactures;—

How would you answer him?

11. Can a protective tariff be effective if it does not raise the price of the article protected? That is, if the price remains the same without the duty as with it, will the home manufacture be encouraged?

12. It is sometimes said that the duty on each commodity should be so adjusted as just to enable the home producer to compete on even terms with his foreign competitor. What reasons can you assign for or against this policy? Consider both its practicability and its application to special cases; as when the conditions of home production are very unfavorable. Suppose the policy adopted, and apply to its discussion the methods of III. 70, 71.

13. About the close of our civil war, the importers of a particular kind of ore from Sweden petitioned Congress that it might be placed on the free list, but asked for a high duty on the metal extracted from it. One reason they assigned was that the ore was very bulky in proportion to the metal extracted from it, and that thus employment would be given to American ships engaged in importing the ore. Was this a sound reason, or the contrary?

14. Tin, not being found in important quantities in this country, is admitted free of duty when unmanufactured. If a company should discover a tin-mine, we have every reason to believe that they would immediately succeed in getting a duty of from 30 to 50 per cent levied upon imported tin in order to place them upon the same level with the miners of other metals. How would the price of tin then be fixed, and would the discovery of the mine prove a benefit or an evil to the community at large?

15. When, in the year 1883, we undertook to build a few iron-clad ships of the first class, it was found that there was no rolling or forging machinery in the country of sufficient power to roll the steel plates, and we had to import them from abroad. Looking more closely into the matter, we find the following state of things:

The ores and metals of different countries have different qualities, so that to get the best combination for special purposes it is necessary to combine those from different countries, or to use some kinds for one purpose and other kinds for another purpose.

Now, if an Englishman wants to set up a great rolling-mill and forge, he can import all the machinery he finds necessary into England free of duty; and after his mill is built he can choose his raw materials of all kinds from the whole world without let or hindrance from the collectors of customs.

If an American wants to erect such an establishment, he has to pay a heavy duty on all the machinery he finds it necessary to import, and after his works are built he must pay a similar duty, generally ranging from 30

to 50 per cent of the value, upon nearly everything he imports for the purpose of being manufactured. Can you trace any relation of cause and effect between this policy and the lack of establishments among us which can compete with those of England in the manufacture of guns and steel plates for war-ships?

What is the effect of the policy upon the building of iron ships in America?

16. In March, 1884, a bill was before Congress making a general reduction of 20 per cent in the duties upon imports. The following reasons against the bill were urged by the minority members of the Committee of Ways and Means:

"The reduction proposed by the bill now under consideration is 20 per cent, and it is a noteworthy fact that not a single interest in the United States has asked for it—neither the manufacturer, the miner, the laborer, the farmer, nor the consumer has requested or demanded the proposed reduction. On the contrary, every interest—manufacturing, laboring, and agricultural—represented before the Committee of Ways and Means has protested most earnestly against the change recommended by a majority of the committee.

"We have said that no interest has asked for it. We should have excepted the free-trade clubs of New York and Brooklyn, which were represented before the committee by a number of so-called political economists, urging not this reduction alone, but entire abolition of import duties which in any way discriminate in favor of American producers."

Should these facts have militated for or against the bill?

17. "The categories all favor free trade, but the facts are all for protection."

Is this true? Taking the world at large, are the protected or free-trade countries most powerful and prosperous? How do laborers in England compare with those in Austria, Russia, and other countries where the protective policy prevails?

18. Is it the object and effect of a protective tariff to increase or to diminish the amount of labor, capital, and industry necessary to command a given supply of commodities?

CHAPTER III.

ON TAXATION.

19. *General Considerations.* It is essential to the existence of civilized society that a certain amount of the labor of the social organism shall be devoted to the performance of the functions of government. The persons who perform these functions are government officers or employés. They have to be paid for their services, and large sums have to be expended by the government in the purchase of commodities for the public uses. It follows that government must be in receipt of an income with which to pay these expenses. This income is called *revenue.* From the very nature of the case it cannot be to any great extent gained by production, as individuals gain their income. It must therefore be obtained by a levy upon the people governed. This levy is called taxation, and the money collected by it is called a tax. The object of the present chapter is to set forth the principal methods of taxation, and to trace their effects upon the interests of society.

In discussing this subject it is very common to consider only the effect of *collecting* a tax. But the effect does not terminate when the citizen has paid his money into the public treasury. All money paid in is to be paid out again by the government, and the disbursement is as important a factor in the result as the collection.

The reader who has mastered the preceding chapters will see that the inflow and outflow of the public revenues are so connected that one cannot be advantageously considered apart from the other. Hence when the economist is asked what will be the effect if government should levy a tax, and thus largely increase its revenue, he would have to reply: I cannot tell what the effect will be until I know how the increase of revenue

is to be expended. It may be expended abroad or at home; in levying war or in constructing a canal; in paying off a national debt, or in subsidies to various forms of industry. The difference between the effects of these various modes of expenditure is much greater than the difference between one method and another of levying a tax.

20. We shall begin by establishing certain principles common to all methods of taxation. In doing this we suppose the reader to have clearly in mind the nature of the monetary and industrial circulations as developed in the preceding book. The first principle to be understood is this:

In whatever way a government may collect a tax, the act of collection diminishes the monetary flow from the taxpayers to their fellow-citizens by an amount equal to the tax. This result is so obvious as not to need extended discussion. Every person who pays money to a public collector has so much the less to pay to his fellow-men for their goods or services, and thus his monetary flow is diminished. If the taxpayer makes this up by charging a higher price for his goods, then the persons who buy his goods, having to pay more for them, will have less money to spend in other directions. Thus the whole amount of taxes collected comes out of the monetary flow of the community. The money demand for labor must therefore fall off by an equal amount (IV. 37); and if there were no compensation for this, labor to an amount equal to the tax would be thrown out of employment until prices fell so as to restore the compensation. This effect has been fully developed in Book IV., Chapter VII., and therefore need not be further considered. Our conclusion is that if a flow T is collected as a tax, a quantity of labor valued at T will be found waiting for the employment of which it has been deprived by its employers being taxed.

But the compensation is effected when government expends its revenue. This act produces the same effect as individual expenditure. That is to say, all the money expended by the

government goes directly or indirectly to those who render it services. Payments to its officers reach them directly; payments for supplies furnished reach the producers of those supplies through the regular channels of trade. Thus, in the act of expenditure the monetary flow is restored and a demand for labor is set up equal to the demand lost by the levying of the tax.

But this labor may not be, and probably is not, of the same kind as that thrown out of employment by the levying of the tax, and there must be a change of employment. We therefore reach the conclusion: *The operation of levying and expending a tax consists in diverting a certain amount of industry from the ordinary channels of business into the channels required by the government.**

But it must not be inferred that such a change of labor is continually brought about by taxation. When a government once begins raising and expending its regular annual revenue, the change of industry must be made once for all, and the industry will continue in its new course so long as the tax remains substantially the same. Now all governments from time immemorial have been obliged to levy taxes in some way, and thus society has grown up to the system of having a portion of its work devoted to the government service. A real change in the effect occurs only when government makes a change in the amount of its revenue. If the revenue is diminished, the industry in government channels must be diminished, and other industry increased. The ordinary operations of taxation and expenditure do not therefore involve any disturbance in the supply of and demand for labor.

21. In drawing the preceding conclusions we have spoken of the government revenue as raised by taxation. A government may also supply its wants by borrowing money to be repaid at a future time. But all that has been said applies equally

* Cf. Book III., Chapter V., and Book IV., Chapter X.

to this case. So far as the immediate effects are concerned, they are the same whether government raises money by taxation or by loans. Every dollar borrowed comes out of the monetary flow from the person making the loan as completely as if it were obtained by taxation. Every person who loans money to the government loans that which otherwise he would have had to expend in other directions. And when the government expends borrowed money, it creates a demand for labor exactly the same as when it expends a tax.

In all this we refer only to the immediate economic effect. The ultimate effects are of course different, owing to the repayment of the loan. When a tax is paid, the transaction between the payer and the government is completed. But when government raises money by a loan, the payer becomes the creditor of the government and thus a national debt is created. The result is that the government must pay the creditor an annual stipend during a period of time which may be stated or may remain undefined. This stipend is to be raised by taxation, which would not have been necessary but for the loan. Thus the ultimate result of borrowing instead of levying is that an increased revenue is to be raised in the future.

22. The effects of the various modes of government expenditure are determined in the same way as the effects of individual expenditure. This may be illustrated by considering the principal objects for which government needs a revenue.

I. That portion of the revenue which government pays to its officers and employés for their services returns immediately to the circulation, so as to form a part of the individual income of those persons.

II. That portion which is expended in the purchase of supplies is divided amongst the producers of the supplies as income, in the way already pointed out (IV. 30). If all the producers are citizens of the government, the money is immediately restored to the circulation from which it was withdrawn, as in the first case.

III. If the money is employed in paying off a debt held by its own citizens, it will soon reach the same general circulation. Each creditor will then be in possession of a sum of money which he otherwise would not have had. As a general rule he will expend the money in increasing his capital, because he has been considering the government bonds which he holds as a part of his capital. But, however he expends it, it must speedily enter into the general circulation, and be expended in the employment of labor.

IV. If the money is expended in public improvements intended to yield a profit, in canals or railways for example, the immediate effect of the expenditure is still the same. But the profit to be ultimately derived from the improvement will be a source of gain which would not have been enjoyed had the expenditure been made for other purposes.

V. If the money is spent abroad instead of at home, then it is of necessity withdrawn from the home circulation, and added to the circulation of the country to which it goes. The result will be a tendency to a fall of prices in the one country and a rise in the other. This will ultimately bring the money back again, and thus in the long-run the balance will be restored. Indeed, it is highly probable that the payment will have been made in the first place by exporting goods and not by exporting the money. That is to say, when the government has to make the payment abroad, it might purchase foreign exchange from its bankers. The home merchants, finding foreign exchange scarce in consequence, will be stimulated to export goods in order to keep up the balance.

23. It follows from all this that the really important question growing out of taxation is, not how the tax is to be levied, but how it is to be expended. In whatever way it is levied, it will have come out of the pockets of the community, and different classes will probably have to pay nearly the same in any case. But when the tax is expended, the government becomes the sole director of the labor which it employs by the expendi-

ture. Indeed, what is really expended by the country is, not the money paid as tax, but the labor employed with it by the government. The money remains, but the labor is used up in the performance of some public work. Whether it is expended for the public good or not depends entirely on the object to which it is applied. If expended in war, then the labor of large bodies of men is turned into the channels of destruction instead of those of production, and the result is a loss to humanity of the whole labor thus directed. If directed to the current administration of justice, an advantage is gained; but the advantage terminates with itself. If devoted to public works which really prove profitable, it is expended with a future profit; if to unprofitable works, it is wasted. If devoted to the payment of a debt, then on the whole the tendency will be to increase the capital of the country, because the bond-holders who receive the money will in most cases employ it in increasing their capital.

24. *Different Kinds of Taxes.* Taxes are ordinarily divided into *direct* and *indirect*.

A *direct tax* is one which it is supposed that the payer cannot collect again from the rest of the community by charging a higher price for his services.

Indirect taxes are those levied in such a way that the person who pays them can get his money back again by charging the rest of the community a higher price for goods on which the taxes are levied.

Examples of direct taxes are those on income. An income-tax consists of a certain percentage of the total net income of the person on whom it is levied. Since the payment of such a tax does not increase his power of rendering service to the community, he can charge the latter no more after paying the tax than he could before. Taxes on the sum total of a man's wealth, and upon his houses and lands, are commonly supposed to fall into the same category.

Examples of indirect taxes are those levied upon the manu-

facture of commodities. In such cases it is supposed that the manufacturer can get his tax back again by charging a higher price for his goods. Thus it is the consumers of the goods, and not the manufacturers, out of whose pockets the tax is supposed ultimately to come. If every commodity which is used by the community is thus taxed, it will be the whole community which will pay, no matter how few the manufacturers. The tax is called *indirect* because it is paid by the consumers, not to the government directly, but through the men who sell goods at the increased price.

Economically this classification is imperfect, because it is scarcely possible to determine in all cases whether a tax can or cannot be transferred by the person paying it charging more for his services or commodities. A tax on city real estate, for example, will lead to its owners charging a higher rental, so that it might be regarded as indirect. But if the owner of a house lives in it, he can scarcely charge to others the tax which he pays on his house. Again, a manufacturer may not be able to collect his tax from others for the simple reason that he cannot sell his goods at all after he raises their prices. He may therefore be obliged to sustain the loss himself, or go out of business.

25. *The Double Classification of Taxes.* The fact is that the methods and systems of taxation are so varied as not to admit of an absolutely exhaustive classification. But the great mass of those which are collected in the United States, and perhaps in other civilized communities, may divide into three classes, as follows:

I. *Taxes levied on individuals.* Under this head we include all taxes which any individual is required to pay irrespective of his wealth or the amount of his income. The following are examples:

A *poll-tax* is a designated sum of money which every male adult of a community is required to pay annually. One dollar was the common amount of such a tax. Being levied without reference to ability, it was extremely obnoxious and has become

nearly obsolete. In the few States where it still exists it naturally costs more than its value to collect it forcibly from the individual. Its payment is therefore generally made, as in Virginia, a condition of exercising the right of suffrage.

Licenses to practise particular trades or professions afford another example. In most of our cities, bankers, tradesmen, and managers of nearly every kind of business are required to pay a certain sum annually for the privilege of exercising their avocations. The payments for this license, being fixed without regard to the extent of the business, constitute a purely individual tax.

II. *Taxes on production.* The distinguishing feature of a tax on production is that it is a percentage of the value of something which the individual produces. For example, an excise duty on spirituous liquors is a tax of so much per gallon produced. Those who do not produce the articles taxed have no tax to pay directly to the government. Customs duties on foreign imports belong to the same class, because the fact that the production is that of a foreigner does not change the application of the general principle. So far as we are concerned, any person who imports goods stands to us in the relation of a producer of the goods. The tax he has to pay is proportional to the amount of goods he supplies us with.

Taxes on production are of two kinds, according to whether they are levied on specially designated articles, or on the total productivity of the individual. Those which we have already mentioned as examples are levied upon special products. The total productivity of the individual is measured by his income, so that a tax on this basis is an income-tax. When such a tax is levied, the individual is required to make known to the government his total profits and earnings for the year, and to pay a designated percentage of them into the treasury.

III. *Taxes levied on accumulated wealth.* These differ from taxes on production in this very important respect: that the former are paid once for all, while in the case of the latter the same wealth has to pay over and over as long as it is

kept. When a keg of beer has once paid the excise duty it is free ever thereafter. When an income-tax only is levied, an individual who gains a surplus income of $1000 year after year has only to pay the same annual tax year after year. But if he invests this income in any form of capital, then for every thousand dollars he invests and keeps he has to pay an annual tribute.

A tax on accumulation may be levied on the same two systems as one on production. That is to say, it may be levied only on certain designated kinds of wealth, such as bank-stocks, houses, lands, carriages, watches, etc., or it may be levied on one's whole possessions without regard to their character.

It follows that there is a double classification of taxes. The one classification turns upon the general condition which determines the amount of the tax, whether the latter is purely personal or depends upon production or accumulation. The other division depends upon whether the tax is levied on sums total or is confined to certain designated objects.

This double classification will be made more clear by presenting it in a tabular form.

Classification.	Order A. Taxes on totals, or unlimited taxes.	Order B. Taxes confined to designated subjects.
Class I. Taxes on persons.	*A tax on every one of a certain age or sex.* (Poll-tax.)	*Taxes on designated occupations.* (Licenses.)
Class II. Taxes on production.	*Tax on total production of every individual.* (Income-tax.)	*Tax on designated products only.* (Customs, excise duties.)
Class III. Taxes on accumulation.	*Taxes on one's whole possessions, without regard to their character.*	*Taxes on designated kinds of wealth: watches, jewelry, plate, carriages, etc.*

26. ***Results of levying a Tax.*** Although, as already stated, the economic questions involved in the expenditure of a tax are more important than those involved in its levy, yet the latter are most in need of investigation. There are two reasons for this. In the first place, the objects for which revenue is to be expended are generally determined by circumstances, and not by the arbitrary will of the government or of the citizens. There are certain officials to be employed and paid, certain supplies to be furnished, certain debts to be liquidated, irrespective of the will of the government for the moment. But the method in which the tax shall be levied is altogether a matter for the decision of the public.

In the next place, the very fact that taxes paid into the public treasury come out of the monetary circulation makes the public very critical in inquiring into them, and it is necessary not only to consider what is theoretically the best kind of a tax, but also what method of taxation is least displeasing to the public. Thus the question of the best method of raising a government revenue becomes a very delicate one, involving not only purely economic considerations, but questions of political expediency. The success of a system of taxation depends so largely upon the condition of the people taxed that no system founded solely on a general theory can be relied upon. Still we should have some guiding principles to start with. Four such principles were laid down by Adam Smith, of which the first was in the following words:

"The subjects of every state ought to contribute to the support of the government, as nearly as possible in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state."

The remaining three principles were: (1) that the tax to be paid by each individual should be certain and not arbitrary; (2) that it should be payable at the time and in the way most convenient to the payer; (3) that the cost of collection should be as small as possible.

27. The tax which most directly accords with the first maxim is one upon gross income. In fact, since Smith defines ability to pay as measured by the revenue which the citizen enjoys under the protection of the state, and as this revenue is neither more nor less than his income, it follows that an income-tax is the very one indicated. Such a tax is levied by determining every man's income from all sources year by year, and requiring him to pay a certain percentage of it into the public treasury. In Great Britain the imposition of such a tax is the most common method of meeting an unusual demand upon the public resources. It was levied by the United States during several years after the termination of the civil war.

It follows that if an income-tax could be justly levied, it would be the only one which we should impose. But when we come to the question of levying it we meet with a practical difficulty at the very outset. In order to determine how much a man must pay, the government must learn first what his total income is. Now, although the amount of one's income can be defined with all necessary precision, its actual calculation in dollars by government agency involves difficulties which are quite insurmountable. The result of these difficulties is that, in practice, an income-tax is among the most unjust and demoralizing that the Government of the United States has ever attempted to levy. Why this is so will be seen by looking more closely into the conditions.

In the first place, it is impossible for any government agency to know much of the business of the individual by any investigation which that agency can conduct. The government must therefore depend very largely on the man's own statements. If the man can avoid making any statement at all, which he may perhaps do by keeping away from the assessor's office, the latter will have but little material for a conclusion. It is true that in such cases the law requires the assessor to determine the man's income in the best way he can, and then to add a considerable percentage to his estimate, and tax the man accordingly. But it has been decided that this law does not mean that the asses-

sor may arbitrarily guess anything he pleases as the man's income, but that his estimate must be founded on some sufficient data. The result is that if no data can be found, or if those found do not correctly indicate the income, the conditions required by the law are not fulfilled. What is yet more demoralizing, even if the man is caught and brought to the assessor's office, it is to his interest to estimate his income as low as possible. Thus a premium is at once offered to dishonesty, an act which every government should do all in its power to avoid.

But granting that the government has every facility for investigating every man's business, new inequalities arise from the fact that the income proper, as defined in economics, may be very different from income as determined by legal calculations. In the case of persons in receipt of fixed salaries or fees the income is perfectly definite, and if the government can determine it, it affords a correct basis for the tax. The inequality enters in the case of establishments where several producers work together in unison, and consume a part of their own products. An extreme case is that of a large farm with a wealthy owner consuming its products. The farmer may, from an economic standpoint, be in the actual enjoyment of a large income. For example, he has a retinue of servants whom he feeds from the produce of his farm. He has his own horses and cattle, and feeds them from his farm. He owns his house, barns, stables, etc., and pays no rent for them. His economic income, on which he should be taxed, includes the money value of all these sources of enjoyment. But the assessor can only levy upon the products of his farm which he has actually sold, and from these sales the farmer must be allowed to subtract all that he has paid for cultivation.

The result of all this is that in practice the agricultural class are almost exempt from an income-tax, which is levied mainly upon the residents of cities. Among these, salaried and professional men pay much more than their proper share.

28. We conclude, therefore, that, instead of attempting directly to determine the revenue which each man enjoys under the protection of the State, a tax must be levied on such visible indications of revenue as the agents of the government can find. It has already been pointed out that whenever a tax is levied upon a manufactured product the manufacturer can, to a greater or less extent, collect the tax from his customers by charging a higher price. It is therefore very generally assumed that, however a tax may be levied, it comes ultimately out of the pockets of the community in proportion to their ability to pay.

On the other hand, all taxes on production are often considered burdens upon industry. By making the product cost more they discourage its consumption, and thus the regular operations of commerce may be greatly interfered with. We have now to consider the relative merits and demerits of different systems of taxation from this point of view.

The system in vogue in the different States of the Union differs from that generally adopted in Europe in that taxes are mostly of that class and order which are levied on one's whole possessions without regard to their character, while such taxes are little known in Europe. There are two reasons for this. The strongest one is that taxes on production would immediately place the manufacturers of each State levying them at an apparent disadvantage in competing with those of the neighboring States, where the same tax might not be levied. The result is that such a tax should be uniform throughout the whole country, and this requires that it should be levied by the general government. This leaves only the first and third classes open to the States. The personal taxes of the first class are wholly insufficient. Hence States fall back upon those of the third class by taxing accumulation. It is very natural to measure one's ability to pay by his accumulated wealth; and if we regard only this ability, without reference to the indirect consequence to society, or the practical difficulties in the way of determining his wealth, this kind of tax is a very fair one.

Such a tax is, however, subject to the same kind of objections which have been brought against the income-tax. The system has proved such a failure that it is wonderful how our State legislatures persist in trying to enforce it. The objections are these:

In the first place, it is impossible to find out what wealth every man possesses. The assessors can see and value his houses and lands, and can guess at the value of his furniture. They may readily find out whether he has horses and carriages, and can guess at their value. When they attempt to do more than this, difficulties begin to arise.

It is obviously necessary that every man shall have the right to subtract the debts he owes from the amount of the property which he possesses, in order to determine his actual ownership. This he is sure to do. On the other hand, the amount of the debt should be charged as a part of the property of the creditor. This is something which the creditor may or may not do, and which it is probable that in the majority of cases he does not do. It will cost more to learn the amount due him than the labor is worth. U. S. bonds are not taxable under our laws. It is said that in the city of New York there is an increased demand for these bonds at the time when the assessors perform their annual duty, caused by the great number of men who at that time put their wealth into the form of bonds in order to lessen the amount of their taxable property.

The next objection to this system is that it makes no distinction between property employed in reproduction for the benefit of society, and that employed in one's own private consumption. Here it is that the system adopted by our States shows at its worst. No doubt the idea that this is a poor man's country has to a certain extent given color to our system. But if so, the idea has not been intelligently carried out. Since a tax must always be levied on something which the assessor can find, it follows that the most rational system is that which taxes the visible manifestations of wealth. Abroad this principle is fully recognized. The public exhibition of every-

thing which indicates rank and position is heavily taxed in England. For domestic servants above a certain class, gold and silver plate, carriages and horses, the privilege of emblazoning a coat of arms, and other indications of wealth, family, and social position, heavy payments must be made. In the United States no notice is taken of these exhibitions, but, instead of doing so, our assessors are engaged in a futile effort to learn the sum total of a man's debts, credits, stocks, and bonds.

29. We shall close with a few general ideas on our system of taxation. The great defect of this system is that it is founded only on our natural ideas of what is equitable, and that our legislators totally ignore the results of experience as to what is really practicable.

The first step in improving our system will be to give up entirely every attempt to tax a man's total possessions, and indeed to give up every idea of an abstractly equitable system. Our policy should then be:

I. To tax nothing the possession of which cannot readily be discovered by the assessors.

II. To tax all visible manifestations of wealth in what the old geometers called a duplicate ratio; that is, in a ratio yet higher than that of the amount of wealth manifested.

III. To tax real estate and other forms of wealth which cannot be concealed.

IV. To tax all products which are designed for the indulgence of the appetites.

We need scarcely fear that any tax levied according to a general law will be permanently inequitable. Take for example the case of real estate. No one is compelled to own it, but as all are compelled to use it, it is probable that the owners can divide the tax equally among the community. The fact is that there is little danger that any reasonable system of taxation will be inequitable in the long-run.

CHAPTER IV.

MONOMETALLISM AND BIMETALLISM.

30. We assume, in starting, what will be more fully shown hereafter, that at the base of every sound system of currency must lie a right of the holder of bank-notes or other forms of paper currency to demand a definite quantity of something having value in exchange for his notes. We have seen that practically the precious metals are the only commodities which have hitherto been extensively used for this purpose. We have also seen (Book II., Chapter XII.) that the rival monetary systems of the present day among the leading commercial nations are *monometallism* and *bimetallism*.

Monometallism is the system under which a government coins only a single metal as unlimited legal tender. Theoretically this metal may be gold or silver, but practically it is only gold among the leading monometallist nations of Europe. The bimetallic system permits the unlimited coinage of either gold or silver. It also permits payment to any amount to be made in either metal at the pleasure of the paying party.

We have now to consider the relative effects and practicability of the adoption of these two systems. Before proceeding to this discussion it is essential that the student should have the facts of the case clearly in mind as they have been set forth in the chapter already referred to. He will then understand the following statement of the point at issue between the two parties. We begin with the views of the bimetallist.

31. *The Bimetallist View.* The ground taken by the bimetallist is that if the leading nations will only agree to coin silver and gold at any uniform ratio of value previously

agreed upon, the market value of the two metals will necessarily correspond to this ratio. Suppose, for example, that it is agreed that the silver dollar shall weigh sixteen times as much as the gold dollar; that is, that government establishes the rule that for monetary purposes the ratio of the value of gold to that of an equal weight of silver shall be 16 : 1. Then, says the bimetallist, if there is a large increase in the silver-supply without any increase in the gold-supply, this increase cannot result in any great fall in the price of silver as compared with gold, because people will then coin silver rather than gold, and thus the surplus will all be absorbed in the increase of the silver money. If, on the other hand, silver becomes comparatively scarce as compared with gold, the only result will be that gold rather than silver will be coined; and since a dollar of either metal will equally answer the purpose, no preference can arise for one over the other. A condensed statement in its extreme form is as follows:

"The abundant metal is the least demanded. Its tendency is to be depreciated, while the scarcer metal becomes dearer. But it is evident that if to increased production we can continue to oppose increased demand, and to decreased production decreased demand, we shall maintain the equilibrium and things will remain unchanged. This is precisely what we propose to do. For the demand, which, without the adoption of the tariff of 15½, would be directed to the metal which is scarce, would, if the tariff were anywhere in force, be directed to the metal that is abundant. For if the bimetallist law permits each and every one to pay his debts at will in gold or silver, every one must see that the dealers in money will neglect the metal which is hard to find, and will seek for that which is plentiful, to have it coined. Moreover, the scarce metal, if it is not in demand, will not rise in price, and the abundant metal, if active demand springs up, cannot fall." *

* Carnucchi, as quoted in *Walker, Money*, p. 268, from *Bankers' Magazine*, N. Y., Nov. 1876.

The Monometallist View. The ground taken by the monometallist is that the permanent use of two metals as money is impracticable. There is in the great markets of the world a certain ratio between the value of a definite weight of gold and the value of an equal weight of silver which fluctuates from year to year with the supply and demand of the two metals. Assume the ratio 16 : 1 to be adopted. If the value of gold becomes greater than that of sixteen times its weight in silver, the latter, being the cheaper metal, will be preferred in payment. Consequently the paying party will not pay in gold at all, but will send silver to the mint for coinage in order that he may make his payments in silver. The result will be that gold will disappear from circulation entirely, and we shall not have bimetallism, but silver monometallism.

If, on the other hand, gold is worth less than sixteen times its weight of silver; if, for example, the market ratio is 15 : 1, then for the same reason silver will stop circulating as money, and we shall have gold monometallism. The result is that the system of bimetallism really results in a fluctuation between one form of monometallism and another according to the supply and demand of the two precious metals thus causing unlimited confusion in the course of trade.

32. *Criticism of the Arguments.* We need not inquire which of these arguments is the stronger, because each of them is insufficient, owing to its being founded on one side of the case and containing no suggestions how the other side is to be taken into account. Each side cites a true cause as the basis of its view, and the only way in which a decision can be reached is by weighing each cause and thus learning which preponderates. This cannot be done with entire precision, because the result depends upon matters of fact about which our knowledge is extremely limited. It is, however, easy to show how the weighing of the two causes should be conducted.

The arguments of the bimetallist would be perfectly sound if the precious metals had no other use than that of being

coined into money. In such a case, whatever the monetary ratio, one kind of a dollar would serve the purpose as well as another, even though there should be fifty silver dollars in circulation to one of gold. This comparative scarcity of gold would no more increase the value of gold dollars than the scarcity of a particular kind or tint of gold would increase the value of that kind of gold.

But, as a matter of fact, the precious metals have other uses than this, and the fallacy of the bimetallist consists in ignoring that fact, or rather in claiming, without fully proving the claim, that the result of these other uses is insignificant. It is quite possible that not more than half the gold and only a small fraction of the silver which is now in the world is in use as money.* Wares, jewelry, picture-frames, spoons, the filling of teeth, and plate of all kinds continually absorb it. Hence the weight of gold in a gold dollar may have a higher market value than the weight of silver in a silver dollar, or *vice versa*, according to the demand for the two metals. In

* This is a subject on which it is difficult to make any general statement, partly on account of the somewhat indefinite meaning of the term *supply*, and partly because the state of the case is continually changing. The fact is that an unexplained mystery now surrounds the question of the stock of gold in this country. From the statistics of exports, imports, and coinage during a number of years past, the Director of the Mint estimated the stock of gold coin in the country in 1884 to be 552 millions of dollars. Of this stock there was held

By the Treasury	89 millions.
By national banks	98 "
Leaving, as is supposed, in other hands	365 "
	552 millions.

Of this stock, only the 187 millions in the Treasury and the banks can be really ascertained to exist; the remaining 365 is supposed to be in circulation. But in fact no gold at all is in actual circulation from hand to hand in the Eastern States, and probably very little in any part of the country east of the Rocky Mountains. What has become of all this gold? Is it hoarded or has it been melted down? If the latter, the state of affairs is most serious, since it would lead to the conclusion that fully the entire annual gold-product of the world is absorbed for other than monetary purposes.

such a case, by Gresham's law, the owners of gold coin will no longer use it wholly as money, but will begin to use it for other purposes. The converse will hold true if silver becomes more valuable in the market.

On the other hand, the monometallist is at fault if he claims, without proof, that under the bimetallic system either all the silver or all the gold necessary for the world's circulation could be coined without changing the market ratio of the two metals. Let us suppose the two metals to be circulating as money in equal quantities on a universal bimetallic system. Then grant that one of them, say silver, is produced in such excess as to cause a fall in its market price. Before it can entirely take the place of gold in the circulation, enough of the excess must be coined to replace all the gold now in use as money, and an equal value of the latter must be withdrawn from circulation. It is certain that this cannot be done without *some* change in the market value. Whether the change would be such as to keep the market ratio of the two metals down to the legal ratio would depend upon how great was the excess of silver production compared with the amount which would be absorbed in the coinage. This involves questions of fact, to be settled by learning the actual state of the case.

33. The whole question turns upon how the influence of the demand for the precious metals for other purposes than that of money compares with the influence of their demand for the purposes of coinage. To consider the question from this point of view we must first point out a great difference between what constitutes the supply of the precious metals and what constitutes the supply of most other commodities. As we have hitherto used the term *supply*, it has meant the quantity of a commodity brought to market during some definite unit of time, commonly a year. The reason of this is that nearly all commodities reach the hands of the persons who are finally to enjoy them, and are thus out of the market, within a comparatively brief period of their production. Most

of the wheat, clothing, and furniture manufactured is sold, and in the hands of some person who is keeping it for his use, within a year of its final production. In the case of more permanent objects, such as houses and farms, although they may be in the possession of persons owning and using them, they are still to a certain extent in the market for sale or rent, so that the supply is not strictly an annual one. In the case of the precious metals the supply is yet more permanent, because so long as they are used as money they never get into any hands which are going to keep them, but remain continually in the market.

Hence the supply of gold dollars does not consist of those which have just been coined from the mint and are waiting to be paid out, nor of those coined within a year, but of the entire mass of gold dollars in the country and in the world. Among the gold may be included some that has been passing from hand to hand since the days of the Cæsars. Thus the actual supply of the precious metals is vastly greater than the amounts annually produced. Hence it is that their value is less dependent upon current production than in the case of any other commodity. If a hundred millions is extracted from the gold-mines of the world during a year, it is only added to a vastly greater existing amount, and thus produces little difference in the total supply.

34. Let us return to the definite proposition of the bimetallists: *If the leading nations of the world should agree to coin silver and gold without limit on any assumed ratio, the result would be to bring the market ratio down to that of the coinage.*

Let us see whether we can test the correctness of this proposition. For ten years past the market ratio has very generally been about 18 : 1. What now will be the consequence of offering to every owner of silver the privilege of having it coined into money which shall be relatively more valuable in the ratio of 18 : 15? Evidently there will be an effort on the part of the

owners of silver to get it coined, while gold coinage will, for the time, cease. The demand thus created will increase the value of silver and diminish that of gold, thus lowering the market ratio. Will it, as the bimetallist claims, lower it to the ratio 15? Clearly not, because if it did there would no longer be any incentive to take it to the mint for coinage. The market ratio will therefore stand somewhere between 15 and 18. The exact point at which it would stand would in the first place depend upon the capacity of the mints to coin a considerable portion of the existing supply of silver bullion. The amount of this supply we cannot precisely estimate, but it must be several hundred millions of dollars. It is indeed so large that the coinage since 1878 of from thirty to forty millions annually by the United States Government seems to have been without any visible effect upon the silver market. It seems, therefore, safe to assume that were the bimetallic theory tested, all the mints of the world would be employed to their utmost capacity for a period of several years in coining silver.

Now consider the case of gold. The same reasons which would stimulate the coinage of silver would entirely paralyze that of gold. Thus the annual supply of the latter metal would be thrown upon the market for use in the arts and manufactures. To what extent would this lower its value as compared with silver? To some extent, no doubt; but we cannot tell to what extent without more knowledge than we have of the actual amount of gold in the world and the actual demand for other purposes than that of coinage.

Would the exclusive coinage of silver be continued until that metal alone was the basis for the money of the whole world? This would depend upon whether all the silver in the market, and all that could be produced and taken to the mints during the few years that the coinage was going on, would suffice for the money of the world. We do not know whether it would suffice or not, and thus we do not know exactly what the outcome would be. We could learn by a statistical investigation, but even that might not convince the contending parties.

CHAPTER V.

THE REGULATION OF THE CURRENCY.

35. The question whether government ought to make any provision whatever for regulating the currency, beyond protecting each individual against fraud or other wrong on the part of those with whom he deals, is an open one. The general principles involved in this question have already been so fully discussed that they need not be further considered at present. In whichever way we decide the question, the fact will remain that governments do sometimes undertake to issue currency, and to enact laws for its regulation. How strongly soever the student may be opposed to any such action on the part of the government, it is very essential that he should be able to trace the effects of the causes which may be brought into play by such action. Our discussion will not, however, be confined to government action, but will include the effect of such policies as may be adopted by the banks of the country.

To form a clear conception of the subject, certain principles laid down in the first few chapters of the preceding book are to be borne clearly in mind. It has been shown:

I. That a regular process of transfer of goods and services, which we have called the industrial circulation, is always going on, and is most necessary to human well-being.

II. That all such transfers of goods and services have to be balanced by a transfer of current money in the opposite direction, thus constituting a system of exchange.

III. That the money or credit passing in one direction must measure the value of the goods or services passing in the other direction. At the same time, the number of dollars of money or credit required for this measure depends upon the scale of prices, increasing or diminishing with that scale.

IV. Since the scale of prices cannot be fixed by any law, but is always a matter of individual bargaining, it follows that we cannot assign any definite quantity of money which shall be necessary or sufficient to effect all the exchanges of a country. If a certain volume of currency is required to transact the business of the country on a certain scale of prices, then if all prices are doubled, the volume of currency must also be doubled, or only half the exchanges can be effected. Consequently what is really wanted to keep business going at its normal rate is a fixed relation between the scale of prices and the volume of the currency.

V. If from any cause whatever the volume of the currency does not correspond to the scale of prices, that fact is made known to the public through an apparent excess or deficiency in the flow of the currency. A deficiency in the flow is shown by merchants not being able to sell their goods at the regular rate, and by the laborers of the community not being able to find employment at regular wages. All this will result in a diminution of wages and prices. An excess in the flow of the currency is shown by a brisk purchase of goods, and by such a demand for labor that laborers are able to command an increase of money wages.

VI. The apparent advantages and disadvantages thus arising are, however, in great part illusory, from the fact that what the laborer loses by lower wages he gains by getting his sustenance at lower prices, and *vice versa*.

VII. Nevertheless, owing to the difficulty of adjusting prices to variations in the flow of the currency, it is very essential to the public good that the general scale of prices should be kept as nearly uniform as possible from year to year. This requires that the flow of the currency shall always be accommodated to the industrial flow, increasing when the latter increases, and diminishing when it diminishes. At the same time it is a serious question whether the sum total of the industrial flow is subject to much variation from month to month when everything goes along at its normal rate. It is sometimes supposed

by men in business that, at a certain period of each year, the "moving of the crops" causes a great increase in the industrial flow, requiring for its compensation a corresponding increase in the monetary flow. Quite likely this may be true; and if it is, we have an example of a case in which a certain elasticity of the currency is required.

It follows from all this that if the regulation of the currency is to be regarded as something for either governments or banks to undertake, the main problem involved is that of adjusting the monetary to the industrial flow. There must be some way by which, when the industrial flow increases, an increased volume of currency shall be drawn into the circulation, to be retired again when the occasion for it has passed. To effect this adjustment is supposed to be one of the principal functions of banks. When more currency is wanted, it is supposed that merchants will apply to the banks for loans, thus increasing the volume of currency, and hence the monetary flow. When the occasion for the increase has passed away, the merchants pay off their loans, and thus the volume and flow of the currency are diminished.

Whether banks always do perform their functions so as to make this adjustment is a question which economists should investigate more fully than they have hitherto done. It should not be regarded by the student as a settled one, but as one which it should be his business seriously to examine. Our present object is to assist him by suggesting some ideas and discussing some theories which will come into play in the investigation.

36. One of the advantages of banks has been supposed to be that of economizing the use of gold and silver. If the latter were alone used as currency, we should have a capital equal to the whole volume of the currency lying idle and gaining no interest. If one has a twenty-dollar gold piece in his purse, he necessarily loses the interest upon it as long as he keeps it. The same is true of the man to whom he transfers it.

The same is true of every piece of coined money issued from the mint. Thus in a certain sense the whole stock of coined gold and silver may be regarded as so much idle capital. The current theory is that in so far as this gold and silver is replaced by bank-notes, so far is interest gained on that portion of the capital of the country which is in use as money. Adam Smith compared the necessity of employing this dead capital to that of taking a certain portion of the land of the country for roads, and then likened the substitution of bank-notes for the gold and silver to the construction of a road through the air, which would permit the land previously occupied by roads to be cultivated, thus making an actual addition to the productive wealth of the country.

But this theory is at the best far from satisfactory. Who gains by this substitution? Every holder of a circulating note loses interest on his investment in that note while it stays in his pocket, unless it bears interest, which bank-notes never do. Therefore the holder of a bank-note loses the interest as completely as if he had coin instead of the note. What is really saved by the substitution is the wear and tear of the gold and silver coin. In consequence of this wear and tear, all such coin is subject to a slight continuous loss, which the public must bear when the coin becomes too light for circulation. We may consider each man's share of that loss to be equal to the wear and tear of the coin while it is in his pocket.

Therefore whatever gains result from the substitution of bank-notes for coin must accrue to the benefit of the banks or other issuer of the notes. If they gained more than the regular interest on their invested capital, there would be an actual gain to the public by the issue of notes. It may be questioned, however, whether they do have any such extra gain. The general rule probably is that the expenses incident to the issue of the notes, and the management of the business, absorb all the profits.

Here a very important point is to be considered. We may readily believe that if all the circulating notes of the country

were issued from a single central institution, a not inconsiderable profit could be made by that institution out of the business. For example, there are now circulating in the United States about 600 million dollars in government and bank notes. If we subtract 25 per centum of this as a coin reserve to be held for their payment, there will remain 450 millions, on which the issuing authority could gain interest. Putting this interest at 3½ per cent per annum, the amount gained would be 15 millions per annum. This would no doubt more than pay all the expenses of the issue, were it made by only a single institution. But when made by several hundred banks, each separately responsible for its own share, the expense is so far increased that most of the banks find little or no advantage from the issue. The government gains an advantage from its issue of notes by having these notes form a part of the public debt on which no interest is paid.

37. Another consideration is that the continually increasing volume of credit used instead of coined money has resulted in the general volume of circulation for the world being several times larger than it would have been had bank credits not been used as money. Since, as already pointed out, this whole volume of currency is necessary to the transaction of the world's business on the present scale of prices, it follows that our present scale is much higher than it would have been but for the employment of credit-currency.

The fact is that the world's business, or, as we have called it, the world's industrial circulation, has grown much more rapidly than its stock of coin. The result of this is that the monetary and industrial flows could not have been balanced without a continuous fall of prices, but for the use of credit-currency. The use of this currency has resulted in the whole gold-supply not being necessary to the transaction of business. In consequence, a considerable portion of the gold-supply has been available for other purposes than that of money; watches, jewelry, and picture-frames, for example. We are therefore to

regard our ability to command these articles of luxury as being due in a great measure to the economy introduced by the credit system. The general benefits to the country rendered by the credit system are therefore that an increased business is transacted without an increased scale of prices, and that an important part of the world's supply of the precious metals has been available for use in manufactures and the arts.

38. *Irredeemable Paper Money.* The kind of circulating notes which we have hitherto considered have been those entitling the holder to receive a certain amount of coin at the counter of a bank. They are in fact nothing but promissory notes, payable on demand, and deriving their value from the ability of the bank to pay them whenever presented. It has, however, been shown that the transaction of the business of the country requires a certain volume of currency to be continually in a state approximating to that of flow, being held first by one person and then by another. In other words, it is passing from hand to hand, and is received by one person only to be paid to another. Now, so far as the immediate results are concerned, it makes no difference to the payers and receivers whether the money thus flowing is coin, bank-notes, or credit. Hence a certain amount of money will always remain in circulation, and if it is credit-money, the payment of the credit in coin may never be demanded.

The result of this state of things is that when a government is in a difficulty, or is financially weak, it may issue a limited volume of its own notes with the reasonable assurance that they will pass for a certain time from hand to hand without the holders demanding payment. By the device of making them a legal tender a forced circulation is given them, quite irrespective of their money value, or of the power of the government to redeem them. If the volume issued becomes so great that the notes depreciate, then, in accordance with Gresham's law, they will displace all other good notes, or credit redeemable in coin, and thus may become the basis of the entire

circulating medium of the country. Such notes are sometimes called *paper money*. Such money was the "greenbacks" of the United States issued during the civil war, the redemption of which in coin was not formally undertaken until 1879.

39. The possibility of a system of irredeemable paper money being a subject of public discussion, it is necessary that we should have a clear understanding of the laws which regulate its value and adaptability. On this subject two opposite opinions are current. One opinion is that such currency would perform all the functions of a circulating medium, if the government would only issue it, and call its units by the name of dollars. After the commercial panic of 1873 a political party was formed in many States of the Union, the object of which was to make the circulating notes issued by the government forever irredeemable in coin. The existing notes were promises to pay the bearer the amounts named on their faces; but by common consent the government was postponing the redemption of this promise until a more convenient season. General B. F. Butler, one of the leaders of the new party, saw the absurdity of having a promise afloat which might never be performed, and therefore proposed that the notes, instead of bearing such a promise, should be declared money in themselves, and called *certificates of value*. Then a dollar note would be simply a piece of engraved paper issued by the government and bearing on its face a certificate that it was really *one dollar* and should be legal tender to that amount for all payments made under the laws of the United States. This view was the strictly logical consequence of the theory already discussed, that money derives its value from the fiat of the government. The reader may be supposed so well able to grapple with this theory that we shall leave him untrammelled in its discussion.

The opposing theory is that an irredeemable paper money has no value except that which it derives from the hope of being redeemed at some future time. Hence the more remote the process of redemption the less the value. This view might

appear to be borne out by the facts of history. The general rule has been that such notes are issued only by governments in difficulties, and in such quantities that their redemption becomes more and more doubtful. Thus the assignats of the French Revolution, the "Continental currency" issued by our own government during the Revolutionary War, and the circulating notes of the Southern Confederacy, all became valueless as it became certain that they would not be redeemed.

40. Although this view is nearer the truth than the other, it is not entirely sound. Under certain conditions an irredeemable paper currency may have the value and perform the functions of money, although it is certain that it will never be redeemed. What these conditions are may be learned from the principles already developed in treating of the volume and flow of the currency.

We have seen that it is absolutely necessary to the transaction of the business of the country that a certain volume of currency should be in circulation. It is impossible that the exchanges of the United States should be conducted without a volume of currency the value of which, measured by our present standard, would be about fifteen dollars for each inhabitant. Hence, whatever bills or tokens the people use in making their exchanges, it is certain that so long as the exchanges go on, the total volume of those bills or tokens will have a certain absolute value. It follows that the first essential condition of value of a paper currency is that it shall be generally accepted in trade as money. It must therefore either be a legal tender by law, or received so generally as a matter of custom that it will be refused only in exceptional cases. In times of great popular excitement the force of public opinion alone suffices to give a forced circulation to such money.

The money being universally accepted, the next condition on which its value depends is its total amount. If strictly limited to an amount not exceeding that required for the transaction of the current business of the community, it will not depreciate.

Here, however, a question will arise in the mind of the critical student. It has been shown in a preceding chapter that there is no definite volume of currency necessary to transact the business of the country, and that this business can be as well transacted with one volume as with another, always provided that the scale of prices is adjusted to the volume. The expression, "amount of currency required to transact the business of the country," therefore needs to be precisely defined.

We start, then, with the proposition that whatever be the volume of irredeemable currency, it will fulfil all the functions of a circulating medium on a certain scale of prices corresponding to its volume. If the volume is less than fifteen dollars for each inhabitant, this scale of prices will be below prices in gold. If gold coin were not receivable as money, it would then be at a positive discount as compared with the paper money which we suppose to be so receivable. But being receivable, we should, in the case supposed, have a mixed currency of paper and gold. If we continually add to the volume of the paper currency, it will at length amount to fifteen dollars for each inhabitant, and will then suffice to transact all the business of the country on the gold scale of prices. If we add still further to the volume, gold will entirely disappear from circulation, and will be at a premium, in accordance with Gresham's law. With every further addition there will be a further depreciation: doubling the volume will simply double all prices as measured by currency. To speak more accurately, the standard of measure, or the dollar, will be reduced to one half its value. The theorem just enunciated may therefore be expressed with greater precision, as follows: So long as the total volume of irredeemable currencies of all kinds does not exceed that necessary to transact the business of the country on a coin scale of prices, so long the currencies will not depreciate.

It follows, therefore, that could a strictly limited volume of irredeemable paper currency be issued, it would perform all the functions of money. Unfortunately, as human nature is constituted, the experiment of such an issue would be a very

dangerous one. The experiment can at present have no object but that of making money more plentiful, and the more plentiful we make it the higher prices will be, and the greater the volume of currency that will be required to transact the business of the country. Hence the same reason which will prompt one issue will lead to another, and so on until the whole fabric collapses in ruin.

41. The regulation of the currency through the action of banks is seen at its best in the working of the Bank of England. The criterion by which the governors of this institution judge of the state of the currency is simply the demand for gold from their vaults. The bank has a variable volume of credit outstanding, payable to its creditors on demand, either in bank-notes or in coin. Since the bank-notes are themselves payable in coin, this whole mass of credit is thus payable.

The object which the governors keep before them is to allow the mass of credit to be as large as is consistent with entire security against such a withdrawal of coin as might endanger their ability to make good all their obligations on demand. The instrumentality through which they regulate the volume of their credits is the rate of interest. When the demand for coin by their creditors exceeds the deposits of coin, they know that it is being withdrawn for export. They conclude, therefore, that there is a larger volume of credit in circulation than is necessary for the transaction of the home business on the existing scale of prices. They therefore raise the rate of interest on loans. The result of this is that their customers are discouraged from borrowing, and thus a moral force is brought into play which tends to diminish the volume of credit currency. This checks the ability of the public to pay, and so lessens the demand for goods. The system may therefore be considered as acting much like the governor of a steam-engine, which closes the throttle-valve as soon as the engine begins to go too fast, and opens it again when the speed is reduced to the proper limit.

In the United States the banks were long prevented from performing this function in the same manner through the existence among us of an idea which has come down to us from the dark ages, that the rate of interest should be limited by law. The national banks are prohibited from charging a higher rate than the laws of the State in which they are located. This limiting rate varies from six to ten per cent. Owing to the great fall in the rate of interest since 1875, this restriction has practically ceased to do any mischief, since the market rate would seldom exceed that fixed by law. Under the system of the Bank of England, and of all banks unrestricted by usury laws, the credit is allowed to the person who will pay the highest rate of interest, regard being had, of course, to the security which he offers. In the case of banks restricted by such laws, if, at the maximum rate allowed by law, the demand for credit exceeds that which the banks can supply, loans become a matter of favor, and the banks give the preference to those who have been its best customers. The result is that the unfavored part of the community cannot get money at any price whatever.

42. The effect of the method of regulation which we have described is to keep the general scale of prices somewhere near the average gold prices of the world at large. It is one of the unsettled questions of political economy whether this system of regulation is really of any benefit to the public. It may be held that banks really foster injurious changes in the general scale of prices at the moment when those changes are most severely felt, namely, in times of commercial panic and depression. These are the times when the flow of the currency least suffices to transact the business of the country, but they are also the times when banks are compelled to be most careful in making loans. What is wanted is some source of currency which shall be available only when a commercial panic is threatened. Plans for this can be discussed with advantage when the public are more enlightened on general principles.

CHAPTER VI.

OF SOCIALISTIC IDEAS.

43. There are men who hold that the present organization of society is not that best adapted to promote the general welfare. These men are so numerous, and so frequently heard, that their views demand the careful attention of the student. To see in what respect it is proposed to change the existing system, we remark that the fundamental principle of the latter is that of individual liberty, or *individualism;* not indeed unlimited liberty, but liberty within certain limits laid down by law. To put the principle into another shape, every man is regarded as the master of his own destiny. This is the underlying idea of the let-alone principle.

Socialism is a general term applied to a number of systems which propose that society, by organized action, shall force the individual to surrender his liberty, or, what amounts to the same thing, his right to the unconditional acquisition and use of property, for the general good. These systems are founded on the belief that the great inequality now seen in the distribution of wealth should be lessened, and that an effort should be made to effect this distribution on certain supposed principles of equity. Such views find very strong support in the philanthropic sentiments of mankind. There is a single man in New York whose income would suffice to feed and clothe fifty thousand families. In that same city there are more than that number of families working hard to make both ends meet, and a very considerable number living in squalor and misery. On a superficial view there is no apparent difference between the constitution of this rich man and of his poorer neighbors which would justify such inequality in the wealth they possess. It is therefore natural to suppose that a system which would

distribute his surplus wealth among the poor and unfortunate would tend to the general good.

In connection with socialism we have to consider the view of the "labor party," the members of which do not call themselves socialists, and do not propose any radically new system, but are simply engaged in a vigorous effort to secure for the laborer a larger share of the product of labor than he can command under the actual system. Although this class has no system of its own, it has a certain way of thinking which is so nearly identical with the way of thinking of the socialists proper that both may be considered together. The object of the present chapter is to inquire whether any system intended to limit the liberty of any man to acquire all the wealth he can by legal means, and to employ it in the way he chooses, can conduce to the general good.

44. We have in the first place to point out certain widespread popular errors which lead to the impression that our present system is not that most conducive to the public good. The mere correction of these errors will go far towards putting us on the right track, and will make it less necessary than it otherwise would be to consider the views of socialists in detail.

The first error is that of tacitly supposing that the inequality now existing in the ownership of wealth indicates a corresponding inequality in its enjoyment. Let us suppose the income of the richest man in New York to be ten millions of dollars, and that of each day-laborer to be five hundred dollars. If their consumption of the products of labor were proportional to their income, Mr. Vanderbilt's family would consume annually perhaps 100,000 barrels of flour, 10,000 suits of clothes, and so on; or at least the equivalent in value of these quantities of flour and clothing. But nothing of the sort takes place. The rich consume but little more of the necessaries of life than the poor. All that the wealthiest man gets to live on is his house, with its furniture and decorations, the food he eats, the clothes he wears, and the articles which contribute to his comfort and

convenience. As already shown, all his surplus income above this is not consumed by him, but is directly or indirectly expended in employing laborers to build more houses, factories, mills, railways and locomotives, to clear more farms and to dig more mines—in a word, to increase the general supply of all the commodities required by men in general (Book IV., Chapter IX.). What society really expends in the support of Mr. Vanderbilt is only the commodities which he takes out of the general storehouse for his own consumption.

The second error is that of forgetting that under the existing system each individual is engaged as advantageously as circumstances admit of in the production of the necessaries of life to be consumed by others; and that no change in that system could result in a more abundant general supply of the necessaries of life. The utmost that could be done by the change would be to allow some classes to consume more and others fewer commodities.

A third mistake is that of supposing that the condition of the laboring class has not improved with the advance in the arts of production during the last two or three centuries. This mistake is about a matter of fact so clear and simple that its misapprehension can only be considered as an extraordinary case of mental blindness, suggestive of the danger of intrusting the improvement of society to men who cannot see. Every one who has taken the trouble to inquire into the actual state of society a few centuries ago knows that the condition of the laborer was about this: He lived in a hovel with hardly anything which we would call a window, with the fire (if he ever had any) in the middle of the building, or perhaps in a chimney-piece at one end. This hovel he occupied in common with the pigs and poultry. His staple article of food was a kind of black bread which a negro of to-day would hardly offer his dog, with a few vegetables from the neighboring garden. The clothing of himself and wife was coarse, scanty, and dirty almost in the same proportion.

Coming nearer to our own times and our own country, we have

a well-known fact still within the memory of our older men which shows the improvement in the comfort of the poorer classes in a yet simpler light. In the early part of this century the clothing for all but well-to-do families had to be made by the female members of each family. They helped to shear the sheep, they spun the wool, wove the cloth, and cut and sewed the clothes. Such clothing was called "home-spun," a term familiar even to the present day. Coming down to the present, it would now be difficult to find within the limits of the United States a family who found such labor necessary. The wife of the poorest day-laborer in our land would rebel at the task of spinning and weaving the material for her husband's clothes. What object would there be in undertaking such a task, when with the wages of a week's labor the man can buy himself a ready-made suit of clothes which will last him a year with no other help from the wife than mending and sewing on buttons?

The improvement in the quantity of food available is not less remarkable than in that of clothing. Three or four days' work of the average laborer will now buy him a barrel of flour and more than a barrel of corn-meal; that is, a month's supply of bread for an average family. A week's labor will buy him a half-barrel of pork.

The fourth mistake is that of overlooking the relative importance of the different requirements of production, and regarding the functions of the laborer as the only ones to be considered. This is an exceedingly natural mistake. When we trace back the operations through which a coat or any other commodity was produced, we find them all to be ultimately resolved into human labor. But we see in the same connection that conjoined with the merely manual labor, which was the immediate instrument, there were other agencies of equal importance which might be called labor, but which are overlooked by the socialist and labor-reformer. These are the functions of the inventor who shows how improvements in production can be made: of the capitalist who saves up his income and

employs it in putting the ideas of the inventor into practice; of the managers who organize the work of the laborers. Without these three classes of men the great class of mere laborers would never have made any advance, but would have been still living in the same miserable style that they lived in one or two hundred years ago. That is, the great improvement in the condition of the laborer which the present generation witnesses is not the work of himself, but of men of a higher order.

45. The fact is that on our present system the enjoyment of the collected wealth of the community is as nearly in accord with the ideal principles of equity as any general system can be. It is a great mistake to suppose that the enormous inequalities which we see in wealth imply anything wrong in the system which permits them. When we speak of principles of equity, we mean principles which have their rise in the constitution of human nature. At the bottom of all these principles is one which we have already several times alluded to or defined: the feeling in the breast of every well-organized man that he is entitled to make the best use of the faculties with which nature has endowed him for his own advancement, and that so long as he gives to others a full equivalent for the benefits that he receives from them, his fellow-men have no other claim upon him. We have shown that under our present system no one can, as a general rule, command from others more that the equivalent of the good he does them. But we may explain the matter again from a somewhat wider point of view.

When we speak of equivalents between services rendered we presuppose some system by which we may measure the values of the respective services. The economic measure of value already defined and investigated is in the direction of equity. True, they result in the value of the service being measured not merely by its character in itself considered, but by its scarcity. But this system of estimation is perfectly equitable. To a man who kindly offers to supply me with several hogs-

heads of air to breathe, I may say with perfect reason, "I have all the air I want already, and your services, whatever the cost, are of no use to me. I therefore decline to pay you for the labor you have spent in bringing me the air."

To take an extreme case of the contrary kind, suppose I am defendant in a suit at law, the loss of which will reduce me to penury. If a lawyer by his good advice shows me how to gain the suit, it would be inequitable and unreasonable should I say to him, "These services cost you only two or three days' labor all told; I will therefore only pay you the value of two or three days of my labor." It would be inequitable, because whatever is the maximum amount which I would be willing to pay rather than be deprived of his advice, that maximum represents the extreme value of the services which he renders me. So far as we two are concerned, that amount represents the good which he does me. Therefore, by such amount as that which I actually pay him falls short of this ideal maximum (and the competition of different lawyers for my case may make it fall very far below that amount), by just so much am I the gainer through the legal talent of lawyers in general. I have therefore no right to complain, though I have to pay my lawyer for three days' work what would cost me as many months. And we may see in general that if society stands in great need of, or will derive great advantage from, services which only a very few men can render, it is perfectly equitable that these men should command from society a return commensurate with the paucity of their numbers. Any other system would presuppose obligations on their part towards society, without corresponding obligations on the part of society towards them.

The practice of competition continually tends to reduce to a minimum the equivalent which men can charge for their services. This also is in perfect accord with equity, since, as the number of persons who can render any services increases, the relative importance of each person diminishes. Thus, even

from an idealistic point of view, nothing can be said against the general equity of the existing system of free competition. There might indeed be exceptional cases of great hardship, as when one person takes advantage of some temporary but urgent want of another. It would be a great hardship for a bystander to demand from a drowning man his whole fortune as the equivalent of pulling him out of the water. But the customs and tendencies of society do not permit of these exceptional cases being taken advantage of in practice. The men who conduct the business of the world find it to conduce to their prosperity and peace of mind to conduct their affairs on broad general principles, without seeking to take undue advantage of exceptional cases.

It is also to be remembered that the existing system insures the employment of every man in the way best suited to his talents better than any other system possibly can. This fact follows from almost the whole system of political economy, so that it need not be dwelt upon. The result is that the great mass of producers who make up the working classes of the world will combine in the most advantageous way.

46. Although the present system seems the best one imaginable in its general arrangements, it by no means follows that it is best in every detail. We have shown that there may be exceptional cases. One point where doubt of the universal equity of the existing system may arise is made when we find artificial means adopted to prevent that competition which insures society against being required to pay for individual services more than they are worth, and to create artificial monopolies. Such a case arises when a telegraph company charges so high for its messages that its lines are idle a considerable portion of the time; when mechanics combine to abstain from work in order that they may command more from society than the equivalent which would be fixed by free competition, and to limit the number of persons who can learn a trade. But it has not yet been shown that anything

would be gained by attempts to prevent such combinations through legal action.

In this connection there is an historical fact still existing and not to be lost sight of. As a general rule those improvements in the process of manufacture which have resulted in so large an increase in the production of cotton and woollen goods that the poorest man in the land can now wear a white shirt on Sunday, and warm clothing all winter, have uniformly met with a bitter opposition from the class to which labor-reformers belong. Even now nothing is more common than combinations against cheap methods of production. These combinations are at war with the good of society in general, and especially with the good of the poorer class of laborers. The greatest want of this class, at least in our large cities, is more house-room. If the organized efforts of philanthropists were directed rationally, this would be the point first aimed at. But instead of the efforts of labor-reformers being aimed in this direction, we find that nearly all the artisans engaged in doing the work necessary to the construction of a house are formed into organizations whose object is to limit in every way the building of houses. They seek to prescribe the number of boys who shall be allowed to learn how to lay bricks, or plaster, or do anything else requiring skill.

47. The inquiry now presents itself, What system would socialists substitute for the existing one? This inquiry it is impossible to answer within the limits of the present chapter, for the reason that the systems which have been proposed are too numerous and too indefinite to be described and discussed in detail. The most celebrated ones are founded on theories of the perfection of human nature which, however beautiful they may be as creations of the fancy, have nothing to correspond to them in the world we live in. Time would be wasted in discussing such systems, for the simple reason that it would be vain trying to instruct any man whose commonsense would not suffice to show him their impracticability.

The danger which now threatens society in this direction does not come from the propounders of new systems, but from popular efforts to make such changes in the details of our present system as it is supposed may remedy the evils which surround us. The way most thoroughly to dispose of the subject is to inquire by what means and to what extent it would be possible for the wisest, most beneficent, and most powerful government, a government which could do anything it pleased, to improve on the present state of things. Let us then suppose such a government to set out to remedy all the evils that we so frequently hear about, and to start mankind on the road to happiness.

48. The first object aimed at by socialists is that every man shall be enabled to gain a living and to secure his development. The question would then arise, What shall we consider a living? One of the first classes to be considered would be the poor blacks of the South. But even these are making some sort of a living, and in fact as much of a living as they really want to make. When the beneficent government sent its representatives among them, they would soon discover that the sole wants of the beneficiaries were a certain annual supply of corn, chickens, and other products to eat, a few old clothes to cover their backs, and some poor shelter from the weather. Just as much work as is necessary to secure these necessaries the typical black man is willing to perform; more is laborious, and he will not perform it unless forced to do so. Now, what shall the government do with him? Give him more food, better clothes, and a better house than he really needs? Then food, clothing, and houses must be taken from somebody else for his benefit. Shall he be forced to do more work in order to render an equivalent for the increased supply of necessaries given him? This would be doing him a great wrong. If he is not to be his own judge of the work he shall do, he is simply a slave. As for development: why should he be developed? He does not want to be, and it would be doing him

an injury to try to fit him for a higher sphere. He is happier with his violin than he would be in the Astor Library, and if we wish to fit the race for higher pursuits we had better begin with more promising stock.

The beneficent government next turns its attention to the tenement-houses of New York City, where several hundred thousand poor are confined in insufficient and unhealthy quarters. What shall be done with them? Shall they be put into larger houses where they will have more air and room? Then somebody must build the houses. Bricklayers, carpenters, and masons must be induced to go to work, and the beneficent government must make provision for feeding and clothing them while they are building houses for the poor. Just as the houses are started the bricklayers organize a strike. What is the government to do? Decree that they shall not strike, but be satisfied with such subsistence as the government can give them? This will be treating them a great deal worse than modern society has ever done. The latter induces them to work if it can, but never forces them to accept conditions against their will.

Perhaps the beneficent government meets the demand by giving them more flour, meat, and clothing, and thus induces them to continue work. But where are the food and clothing to come from? Perhaps the government will ransack the houses of the wealthy to seize the stores of food and clothing reaped by their wealth. But they would be greatly disappointed, and might find these stores not materially greater here than in any other houses. The next resource would be to tax people in general, and the wealthy in particular, to raise money to purchase flour for the bricklayers. We anticipate no difficulty on the part of the government in collecting the tax to any amount, because we suppose its power unlimited; but we do not assign it the faculty of making something out of nothing. Therefore if the wealthy are taxed, the money which they can spend in other directions will be diminished by exactly the amount of the tax. The wealthy man of leisure must there-

fore discharge some of his servants, and thus throw them out of employment. The railway owner must stop building locomotives and rolling-stock for his railways, giving to the government for the bricklayers the money he would have expended in this direction. The result is that the builders of locomotives and cars will find their wages diminished, or perhaps they will be thrown out of employment. Then, when the government took the money and bought flour for the bricklayers, it would come into direct competition with the very occupants of the tenement-house whom it was trying to relieve, and who wanted all the flour they could get. Thus the supply of flour would be diminished, the price would rise, and all the poorly fed, clothed, and housed poor would for the time being be worse off than before. The final result would be that the cost of building the tenement-house would come out of servants, builders of locomotives, and the occupants of the houses themselves, no matter what arrangements the government might make.

Our government next tries a third step. It finds that the railways of the country are very largely owned by a few wealthy men who ought not to be allowed the enjoyment of so much wealth, and therefore determines to confiscate their property. It therefore seizes all the railways, and declares that the latter are hereafter to be run exclusively for the public benefit and are to belong to the public. But how much better off would the public be? Shall everybody who wants to ride be carried free? No, because then the railway will have no income to pay the men who run it. Shall it charge the same price as before for transportation? Then nobody will be any better off. Shall it lower the rate? By whatever amount it lowers the rate, there will be so much less money to pay the employés who manage it and keep it in repair. Making the best possible supposition, and assuming that the government could manage the road as well as the stockholders, all that could possibly be gained would be the dividends received by the stockholders. This will be so insignificant, when compared with the total transactions of the road, that it is not worth considering. But even

if saved, how would society be better off? The stockholders generally spend their dividends in improving their own or some other roads, or in building houses or improving farms. If the government stops the dividends, then these improvements must also stop, and thus the capacity of the country at large must be diminished.

In this argument we have introduced the supposition that the railway could be as well managed by the government as by the stockholders. As governments go, this supposition is almost absurd. Every man of common-sense knows that the management would be a great deal worse rather than better.

Finding it impossible to supply the occupants of the tenement-houses with better quarters without injuring other classes of laborers, what shall our government try next? Shall the occupants of the tenement-houses be removed to the country where they may have more fresh air? The very fact that they live in the city shows that they prefer city to farm life. In removing them the government would therefore be overruling their own wishes, which, to say nothing of the wrong of it, would produce speedy revolution.

But could not our government do something by employing the poor of the great cities, thus enabling them to help themselves? Everywhere we see hundreds and thousands of people out of employment and seeking for something to do. We have shown that there is one way by which these people may get employment, and that is by going to work on the very best terms they can command. Can the government do anything better for them? The only measure that any one proposes is that the government shall hire them to do something. But in order to pay them wages government must levy taxes. This tax would be taken right out of the monetary circulation, and would cause a diminution in the ability of the taxpayers to employ labor exactly equal to the increase in the power of the government to do so. Thus, at best, the injury would equal the benefit.

But the question would arise, In what labor would the gov-

ernment employ the men? In breaking stone, which nobody wants broken? If so, it would be a waste of labor, and the sole effect of the operation would be to enable the laborers to eat food without producing an equivalent, and thus to diminish the amount of subsistence available for other laborers. Shall they break stone that somebody wants broken? Then the intervention of the government will not be required, because if anybody wants stone broken he will himself hire laborers to do it.

49. All projects of the class we have been describing can be most clearly analyzed by looking at the whole subject from a communistic standpoint, as in Book II., Chapter IX., and by considering the distribution of the products of labor among the various classes of society from the point of view there taken. The fact is that, under the present arrangements, men are working for each other in the most effective way that it would be possible for them to work under the supervision of the wisest government. We have already a system of socialism marvellous in its perfection. The most admirable feature of it is that those propensities of men which we consider most selfish lead them to work for the good of their fellow-men. The men of wealth who employ their money in building houses, managing railways, and sailing ships are great public benefactors, engaged in supplying thousands and even millions of their fellow-men with shelter and with the means to make journeys and to procure sustenance from all parts of the world. Those who would destroy the system may be aptly compared to passengers in a wooden ship who, on finding the weather cold and the supply of fuel insufficient for cooking, are bent upon cutting up the ship for fuel in mid-ocean in order to warm themselves by the fire.

50. We have not yet considered some of the most far-reaching and yet elementary difficulties in the way of practical socialism. One difficulty is that no matter how much society might want to benefit an individual, it could not do it, from the

mere fact of not knowing what the individual wants. Every man has his own tastes and whims, which may change from day to day, and which society cannot possibly provide for. It is essential to his happiness that he should be allowed to gratify such transient wants in the best way he can. It would be vexatious to have any one but himself decide whether he should take a railway journey when he felt that he needed a change; whether he should have coffee or milk for breakfast; whether he should wears his old clothes or be supplied with a new suit. Society lets him look out for himself in all such matters, not because it is selfish and does not care for his good, but because it really cannot help him. He must look out for himself, not because other people are indifferent to his welfare, but because they cannot promote it as well as he can himself.

A little consideration will show us that no system of socialism is possible without such an abridgment of individual liberty as no class of men would for a moment tolerate. If society is to guarantee an individual a living, it is quite certain that it must prescribe some conditions. To say that every man shall be entitled to a living, and yet retain the right to seek work where he pleases and to prescribe his own condition of labor, would be little short of an absurdity. What society now does is to offer him the best living it can, on the best conditions he can command, leaving him free to accept or decline them. Better than this it cannot do. When society prescribed the conditions to which he must submit, a rebellion would begin.

CHAPTER VII.

OF CHARITABLE EFFORT.

51. As men advance in civilization the amelioration of the condition of their fellows must become a subject of increasing interest to them. It is not the function of political economy to decide what men ought or ought not to do to promote this end. But it is a legitimate function of the science to point out the effect upon the welfare of the race of any and every charitable effort into which men may enter.

We begin with some general remarks upon the impulses of our nature. It is a well-known fact that those appetites which are essential to the continued existence of mankind are liable to become destructive of his well-being when not controlled by reason. Hence in all civilized communities laws are enacted having for their object the enforcement of certain restraints upon the appetites. The question may now arise whether it is not possible that those benevolent impulses of our nature which move us to relieve distress and suffering may lead to real injury when not guided by reason; whether, in fact, these impulses may not need to be restrained as well as the appetites. That such a case is at least possible will be evident when we reflect on the complexity of the social organism, on the numerous remote effects which the combined charities of the community may have in the course of generations, and on how little those who give alms consider these effects. It is impossible to maintain any general proposition on this subject which shall cover more than a limited range. We must therefore reach a conclusion by considering different cases in detail.

52. Let us first take up the familiar case of a beggar. A gentleman is implored for relief by a repulsive piece of human-

ity, enshrouded in rags and covered with dirt. Moved by pity, he gives him a dime and passes on. What is the economical nature of this transaction? We reply that the transaction is one of supply and demand, belonging to the same class as the supply of and demand for personal services. The combined willingness and ability of a number of persons in the community to give dimes to beggars constitutes a demand for beggary, just as much as if an advertisement, "Beggars wanted, liberal alms guaranteed," were conspicuously inserted in the columns of a newspaper. If there is any difficulty in seeing the truth of this statement, it should disappear when the reader reflects that nothing is necessary to constitute an economic demand except readiness to make payments on certain conditions. Among a crowd of children fond of music, an ability and a willingness to give pennies to organ-grinders constitute a demand for their services. This is evident. Though not so evident, it is equally true that an ability and a willingness on the part of people of delicate musical ears to give organ-grinders pennies for "moving on" are equally a demand for their services, in spite of the fact that the service is the very thing they are paying to get rid of. The fact that the benevolent gentleman may wish that there were no beggars, and may be very sorry to see them, does not change the economic effect of his readiness to give them money. From an economic point of view the gentleman pays the beggar for being poor, miserable, idle, dirty, and worthless.

Such being the case, the supply of this service arises according to the same economic laws that the supply of any other service arises. As in every community where there is a demand for bricklayers a certain portion of the young will become bricklayers, and will try to lay bricks in such a way as to gain the highest wages, so in a community where there is a demand for beggars a certain number are sure to become beggars, and to study the professional accomplishments which will be most likely to draw money from the pockets of the benevolent. Hence, in the case supposed, mendicity will exist according to

the same laws that govern the existence of other trades and occupations.

53. It is often said that imbecility and mendicity are a growth of civilization, being unknown in primitive communities. Hence men look upon them as they look upon the diseases of civilization, namely, as something inseparably associated with progress. But a very little consideration will show that there is no such necessary connection. Why are there no beggars in comparatively poor and simple communities? We answer, for the same reason that there are no great actors, philosophers, or mathematicians in such communities. It is because the community cannot afford such luxuries. Where it is perfectly certain that no one can get anything in alms by any method of begging, mendicity can never arise. If, as may sometimes be the case, a child grows up too imbecile to make a living or do any work, his parents, friends, relatives, or acquaintances take charge of him as best they can, and are careful that he is not allowed to wander away and starve. Mendicity can gain a foothold only when the community gets so wealthy and benevolent as to present an economic demand for beggars and paupers.

54. A natural reply to the above considerations will be that they presuppose the mendicant to voluntarily adopt the profession of being miserable, and that, if it can be shown that this miserable condition arose without any overt act on his part, the law of supply and demand will not cover the case.

Cases in which this answer would be correct are not inconceivable. The extreme difficulty of deciding whether the misery of any special mendicant is or is not intentional might be urged on either side; but in a scientific discussion we are concerned with the principles of the case, rather than the special facts. To show what view we are to take of the possible antithesis between voluntary and involuntary misery, let us consider another case.

Here is a little girl, born of poor and rather demoralized parents, who is being reared without any definite object in life. From early childhood she becomes aware that sums of money which seem to her fabulous in amount are raised by rich people for the benefit of the poor. If she lives in Europe, she is accustomed to seeing boxes in churches plainly marked "For the poor," and she finds out what it means before she can read. On getting a little older she becomes conscious that she has no chance to get any share of this money except by being even poorer than her parents. If she learns to cook for wealthier people, to do housework, to sew, to nurse; and if she uses the knowledge thus acquired in such a way as not to be a burden upon others, then she will have no right to any of this money. To get her share of it, she must remain poor, miserable, and worthless. To see what effect this may have upon her education and aspirations, let us look at human nature from another point of view.

We may say that, in a certain sense, men are by nature poor, miserable, and worthless. That is to say, if a child grows into a man without ever being taught or required to exercise his faculties, he will grow into this kind of a being. To make a decent living, even of the lowest sort, he must take pains, practise self-denial, seek for acquaintances, and make for himself a good character among his fellow-men. It is therefore not necessary, in order that the demand for objects of charity should be supplied, that any person should deliberately make up his mind to be a beggar. To become such all he needs to do is to do nothing. He can then with a greater or less approximation to truth say, "I have never tried to become a burden on society, and yet I can get no work; I have nothing to do; I am nearly starved; I shall soon be naked; I have no house in which to lay my head; I cannot get money for the barest necessities of existence."

The lesson is this: Although what the man says may be true, yet, if there had been no charity, he and his parents would

have taken a different view of life, and he would have had a different training and a different history.

55. The question may now be asked, Does it follow from all this that no effort to benefit our fellow-man by giving him of our own subsistence can be otherwise than vain or injurious? Are we to see thousands of our fellow-beings suffering the evils of poverty without making an effort to relieve them? Are we to see them in wretchedness and misery without an effort to alleviate their condition? Is a certain fraction of our race doomed to continue the lowest form of existence, do what we may?

We reply that the questions are not necessarily to be answered in the affirmative on account of anything we have said. What common-sense unites with science in saying is this: In order to alleviate the race we must intelligently adapt our means to our ends, and by merely following the blind impulses of our sentiments we do not secure such adaptation. The real difficulty is that charitable effort, as we see it every day practised, is not directed intelligently to the best ends. The ends to which it is intelligently directed are comparatively unimportant ones. To show this, let us see what should be the benevolent purposes of a reasonable and philanthropic being and compare them with the ordinary purposes of charitable associations.

Let us suppose that there are in this country one million people in a state of such destitution that they should receive the help of the charitable. Supposing the state of society to remain the same generation after generation, there will continue to be a constant portion, say two per cent of the population, in this deplorable condition. This brings to our minds three classes of people who may need our help. We have, firstly, the few score or hundreds whom we, or the organizations with whom we are connected, can find in our own city. Secondly, we have the remaining portion of the million whom we do not see, and whom we must leave others to find. Thirdly, we have

the possible future millions who are to live in this country in future generations.

Corresponding to these three classes we have as many different purposes which charitable effort may have in view. The ordinary charitable society is devoted principally to the first class, namely, those poor whom we can find within their own sphere of operations. As a general rule their efforts do not make any change in the character of the unfortunate people with whom they deal, being mainly directed to the relief of their immediate wants. Of course the society would like very much to elevate them in their characters and constitutions, and many such associations have this in view. But the chances are that such efforts do not generally lead to any well-marked beneficial result.

Another purpose we might have in view is the relief and the elevation not only of the few poor we can find, but of the whole million whom we suppose to live in the country. Finally, a yet wider and higher motive is that of seeing that the prospective poor and miserable of future generations are diminished in numbers as much as possible.

We thus see that charity may have very different objects in view; and it is perhaps not quite just to say that charitable associations do not intelligently adapt means to ends, for, as a matter of fact, it must be considered that if their end is merely to relieve those particular persons to whose amelioration their efforts are directed, then that end is certainly attained by them. There can be no doubt that if we give a supply of food and clothing to a half-starved family, the wants of that family will be relieved so long as the supply holds out. The real question is whether this kind of relief should be the main object of our supposed reasonable and philanthropic being who desires to do the greatest good by his efforts.

A very little consideration will show us that it should not. To a reasonable being the interests of the mass of poor whom he cannot reach should be as dear as the interests of the few whom he can reach. The object of not adding to the number

of the poor and miserable should be kept in view, as well as that of aiding the poor and miserable who now exist. The diminution of the number of such beings in future generations should be kept in sight as well as the diminution of those at the present time.

The first answer to this will be that even if we grant it, yet the great mass are people whom we can neither see nor help. Still less can we do anything for future generations; therefore we will do our best work by attending to those who are within our reach. We must let the future bear its own burdens.

Here the philanthropic philosopher must join issue with the charitable man. The way we deal with the poor and miserable we see around us has a most important effect upon the poor and miserable we do not see. The next generation will be brought into the world by this generation, and it depends entirely upon the acts of this generation how many poor and miserable there shall be in the next. The law that like brings forth like is as true with the human race as with animals and plants. The greater the number of the degraded classes who are allowed to produce offspring which are allowed to grow to maturity, the more rapidly will these classes increase. What effect we wish our acts to have does not come into the question in considering the consequences of those acts. What we are concerned with is the natural consequences of our acts and not the motives which prompt them. We cannot evade the conclusion that the inevitable result of our current forms of charity is to enable the poor, miserable, and worthless elements of the community to bring forth children, to enable those children to escape the perils of infancy and grow to manhood, and to deprive them of the strongest incentive to become useful members of society, namely, the prospect that they will starve to death unless they learn to make a living. This result is what the reasonable philanthropist must deplore.

The defect in the current reasoning of the charitable is simply this: They consider that the effects of their charity terminate with the relief of their beneficiaries. Hence when they

find that an applicant is really worthy, they consider their case fully made out. What they do not consider is the moral effect of their work upon the demoralized classes at large, and especially upon the training of their growing children.

The question now arises whether there is any way of modifying these effects. Must all charitable effort be directed solely towards enabling the degraded classes to live and propagate without elevating them? Can they not be elevated by such action? The answer to these questions should come from the socialist rather than the economist, and so does not properly belong to the present work. It may, however, be remarked that all classes of humanity do, to a certain extent, admit of elevation, and that they can, generation by generation, be slowly elevated if we properly adapt the means to the ends. The great end we should have in view is that of enabling the individual to earn a living by his own exertions. So far as our charitable effort is directed towards that end and no other, so far may its effect be beneficial. Society is greatly in want of laborers of every order who can be relied upon. If the children of the degraded classes could be taken in infancy, before their bad habits have had time to form, and trained to earn a livelihood, a certain proportion of them would be redeemed. If those who could not be so trained were allowed to starve, the number to grow up a burden on society would be diminished. The greatest difficulty in the way of such a policy is to organize charitable effort in such a way that it shall be intelligently directed to this end. The natural tendency of such effort is the very opposite of that here pointed out. What we really ought to do is to train, persuade, or compel every person to earn his living under penalty of starvation. The fundamental idea of current charity is the wholly incompatible one of enabling the favored few who chance to excite our sympathies to get a living without earning it. Just so far as we can free ourselves from this benevolent impulse and turn our efforts in a more rational direction, so far may we hope that charitable effort may yet be beneficial to the race.

56. We have seen in preceding chapters of this work that every man who saves up and invests his money does really employ it in such a way as to benefit all laborers able to earn a living. He does this by increasing the supply and lowering the price of the necessaries of life. Of course he does not help those who are unable to labor, because one who has no income of his own can purchase nothing, no matter how cheap it may be. We have also seen that the profits on an investment will be greater the greater the advantage which it insures to the community. If a capitalist's investment is a losing one, it shows that the labor he has directed by it has not been employed in the most economical manner to supply the wants of society at large. Without denying the possibility that intelligent philanthropic effort may in the future do much for elevating the most degraded of the race, we may at least lay down this proposition: It has not yet been clearly shown that the possessor of a fund can benefit the race by it in any more effective way than by investing it in the best paying form of capital. Better methods will no doubt be found in the future, for the reason that this application of capital takes no account of the training of children, and it is to this training that philanthropic efforts should be directed.

57. *Concluding Considerations.* The study of political economy has two objects. One is the pleasure which every well-constituted man feels in understanding the processes which are going on in the world. This pleasure is quite independent of any relation of these processes to the wants of life. The other object is to see how the interests of mankind may be promoted by public action.

It is instructive to seek out a classification of the interests which actuate men in promoting the good of themselves or others. Our present stand-point leads us to consider three motives to human action:

The love of self;

The love of a limited class having common interests and feelings with one's self;

The love of mankind at large.

Let us consider these motives in order.

The love of self, or *egoism*, as it has recently been called in philosophy, or selfishness, as its abnormal development is familiarly termed, is not so great an evil as is commonly supposed. It would indeed be a most destructive agent if it were absolute; that is, if men in general were so selfish as to care absolutely nothing for the happiness of their fellows. But, as a matter of fact, moral training and the habit of obedience to law have so modified the inherent selfishness of the individual as to render it comparatively harmless. One reason for this harmlessness is that, as a general rule, every man can promote his own interests a great deal more effectively than he can promote any one else's, or than any one else can promote his. Another is that the selfish man can get little help from his fellow-men. But the most cogent reason of all is that men cannot promote their own economic interests except through promoting those of their fellow-men.

The second form of love, that for the class to which we belong, is, at present, the most dangerous one to which society is exposed. How this is we shall show by comparing it with the third form.

Love for humanity at large has before it a wide field for its beneficial exercise, if it can only be spurred to action and directed into appropriate channels. But there are great difficulties in the way of its most effective operation. It is almost a hopeless task for any individual, acting by himself, to do very much for the benefit of society at large, unless he is possessed of power or wealth. Legislation has done little, because legislatures in general have never had the problem presented to them, or made it a subject of special study. Their views generally represent those of the community from which they come, and the interests which they seek to promote are apt to be temporary in their character, and only such as strike the

public at first sight. We may make this clearer by some illustrations as showing the general field of possible action which lies before us.

In thirty or forty years nearly all the people now on the active stage of life in this country will have passed from that stage, and a new generation will have taken their places. To one loving mankind at large the happiness of that coming generation should be the first object. Now, although at first sight it might seem almost hopeless to attempt doing anything for this coming generation, yet by looking more closely we find that its happiness depends almost entirely upon our own actions. To promote its happiness we should bequeath to it physical and moral health, a thorough training in correct principles of action, and such laws and institutions as shall best allow it to promote its welfare. We should avoid allowing it to be encumbered by criminals. Love of mankind at large should prompt us to take such measures as shall discourage or prevent the bringing forth of children by the pauper and criminal classes. No measure of repression would be too severe in the attainment of the latter object. The consideration due to a degraded man of any class is as nothing compared with that due to the society of the future. Many a good man has gone to his grave through the failure of society to hang one criminal. No higher or purer source of human happiness exists than the tender sentiments of man towards man. But these very sentiments are a source of enduring injury in the repugnance which they generate to a really effective system of dealing with the dangerous class in our population.

After promoting the birth of good stock, the next step would be its proper education. Here only careful experiment can show what society is able to do. The casual remarks which the budding child hears dropped from its parents at table, and from which he forms an idea of the spirit which animates men, is a more powerful instrument of education, moral or immoral, than any other. This would suggest the foundation of institutions for the correction of children of tender age who are in

danger of becoming criminals. But it is an open question whether such institutions are or can be made to succeed. The danger which besets most charitable institutions devoted to the rearing of children is that of being conducted from a sentimental rather than a scientific point of view.

Let us now return to the second form of selfishness which we have described, and which, as just remarked, is in the present state of society, and especially in the United States, a most dangerous one. It is dangerous on account of being vastly more powerful and less repulsive than individual selfishness, while much more injurious to society at large. When we analyze the calls for legislation made upon Congress and the State legislatures, the economic and social theories in the newspapers, and the various factions and parties which contend for influence in political affairs, we find that nearly all have the interests of companies, corporations, or other special classes of men in view, and that it is sought to promote these interests at the expense of those of the public.

The most common example of this motive is seen in the trades-unions and labor organizations which exist in nearly every civilized country. The individual bricklayer would be powerless in a war with society, but his feeling of sympathy with all his fellow-bricklayers who are within reach leads to a union with them, which comprises a general understanding that each individual shall subordinate himself to the union at large for the general benefit of the class of bricklayers. This feeling extends in a diminished degree to similar unions of other trades in the same community, as well as to the unions of other communities. Thus we have a sort of network of sympathy, strongest in binding the individual to those of the same trade who immediately surround him, but yet including within its range all the unions of the land. At first sight there is something which looks praiseworthy in this devotion of man to man, especially when we see, as sometimes happens, a number of individuals voluntarily suffering extreme privation, and perhaps giving up opportunities for profitable

employment, in obedience to a supposed interest of their class. Now, what is wanted is that this spirit of sympathy should include not merely the limited class which it does, but the whole community. Failing in this, the philanthropist would like to see it confined to such a field as would benefit the community. As things now stand, the organizations are as purely selfish as the most selfish individual, and are at the same time vastly more powerful, and therefore more difficult to control.

We have presented these considerations in order to show the student of political economy what a field there is for the application of what he has learned, if he desires to take an active part in the improvement of society.

ADDENDUM.

A SUMMARY OF THE LEADING PRINCIPLES OF ECONOMICS AS SET FORTH IN THE PRESENT WORK.*

The economist should understand:

That there is a general science of economics, founded on those characteristics of human nature and on those relations of man to his environment which are common to all civilized people;

That the principles of this general science have to be specialized and modified to suit the circumstances of each people to whom they are applied;

That the main object of economic science is to enable us to foresee the effects of economic causes (I. 24);

That all our conclusions rest upon the hypothesis that men intelligently adapt means to ends, and seek their own interests according to the best of their knowledge (I. 8, 17, 18);

That there are no universal theories in economics to be applied without regard to time and circumstances, and that no formula can be given which will save the statesman the labor of working out each case on its own merits;

But that economics furnishes the statesman with principles most necessary for working out results;

That capital is the result of abstinence from present gratification for the sake of future good, and, in order to be

* This summary of economic principles is given in order to facilitate their critical examination by the reader. They will also assist the student in deciding whether his grasp of the subject is satisfactory.

effective, must be so applied as to increase the ultimate product of a fixed amount of labor (II. 29, 30);

That stocks, bonds, and every other form of interest-yielding investments are rights of ownership in material exchangeable capital (II. 31);

That the work of the organizer of labor is as necessary to production as that of the laborer himself (II. 40);

That labor can slowly change its occupation without detriment, and can thus adapt itself, within certain limits, to varying demands (II. 49, 50; IV. 38);

That all men performing economic functions of any kind are engaged in labor designed to promote the good of their fellow-men (I. 1, II. 53);

That the greater and the better the production of the necessaries of life, the more perfectly will the wants of the community at large be supplied (II. 54, 56);

That bank credits constitute an integral part of the volume of the currency, and should be included with specie and bank-notes in estimating that volume (II. 96–99);

That there is no such thing as an absolutely invariable measure of value, and that the best approximation to an absolute standard is found by making labor itself the standard as nearly as possible (III. 5–11);

That the quantity of goods which can be sold in any market under fixed conditions depends upon the price at which they are offered, diminishing with every increase of price, and *vice versa* (III. 14);

That the foregoing proposition is true only for each state of the market separately, and that the quantity of goods which can be sold at a fixed price will vary from time to time with the public needs (III. 16);

That all the requisites of production are not equally at the command of everybody (III. 21–28);

That rent of land arises only because the products of the soil command a higher price than they would if they could be produced in unlimited quantities (III. 33);

That the net cost of production of many commodities depends greatly upon the natural facilities which the producer can command, and continually diminishes with improvements (III. 45–47);

That the values of the total imports and exports to and from any one country necessarily balance each other in the long-run (III. 55–61);

In consequence, that any action which diminishes imports must ultimately diminish exports in nearly the same degree (III. 70, 71);

That the rate of interest is regulated by the supply and demand of loanable funds (III. 72–75);

That every legal person, in the long-run and as a general rule, pays out as much money as he receives. Hence any increase in his receipts will be followed by a corresponding increase in his payments (IV. 4);

That the economic effect of an increased flow of money from any person cannot be completely determined until we find what laborers the increase reaches (Bk. IV., Chap. VI.);

That there is no definite volume of currency necessary to the transaction of the business of a community, but only a definite relation between the volume of currency and the scale of prices (V. 30);

In consequence, that a scarcity in the monetary flow can be remedied by a fall in prices as well as by an increase in that flow; but that this particular remedy is incomplete and unsatisfactory, because all prices cannot thus adapt themselves (IV. 40);

That an increase in the volume or flow of the currency does not permanently help business, because it leads to a rise of prices, and therefore to a greater necessity for money;

In consequence, that we cannot increase the absolute value of the total volume of currency by additions to that volume (IV. 19);

That no increase of wages benefits the laborer if he has to pay an increased price for the necessaries of life, as he always

will unless his wages are increased by increasing the effectiveness of his labor;

That as a general rule a person can gain income only by assisting his fellow-men to an amount equal to his income (IV. 29);

That whenever the price of a commodity rises, some or all persons engaged in supplying that commodity are gaining a corresponding increase of income (IV. 30);

That no person can increase the demand for labor by expending his money in one way rather than in another, but that, in whatever way he spends it, he is directly or indirectly creating a demand equal to his expenditure (Bk. IV., Chap. VI.);

That the demand thus created is for the particular labor necessary to produce the commodities which he has demanded, and that, in consequence, he directs labor by directing his expenditure;

That any change in the direction of labor produced by change of expenditure can be made by a corresponding change in the occupations of men (II. 49);

That by no device of government or society can everybody be satisfactorily employed all the time;

That demand for labor involves a relation between two terms—the laborer's estimate of the value of his services, and the wages which others can afford to pay him (IV. 39);

That the proportion of the unemployed will in the long-run be nearly the same, whatever financial policy we adopt, and however men spend their money;

That any cause which prevents the rate of wages from adapting itself to the varying demand for labor is injurious both to the laborer and to society;

That no labor-saving processes can diminish the sum total of the demand for labor, because whatever money is thus saved to any person goes to demand labor in some other direction (IV. 41);

That the capitalist can gain interest on his investments only

by helping his fellow-men who have not accumulated capital (Bk. IV., Chap. IX.);

Consequently that the more miserly he is in his habits, and the more careful he is in his investments, and the greater the excess of his capital above that required by his personal needs, the greater the good he does to his fellow-men;

That a man takes from the common stock of goods only what he actually expends in his own consumption (Bk. II., Chap. IX.);

That the sole object of wealth is the sustenance and enjoyment of individual men;

That the benefit of every industrial establishment is measured by the product it turns out, and not by the employment which it gives to labor or capital; that, on the contrary, the labor and capital which it absorbs are to be placed on the debit side of its account with society (Bk. IV., Chap. XIII., and V. 13);

That the motives which animate men in the pursuit of wealth are in the highest degree beneficent, and have led to a system which insures to every man fit to live the maximum of enjoyment from his labor, if he will only adapt himself to the system (Bk. V., Chap. VI.).

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